PROGRESSIVE ARCHITECTURE

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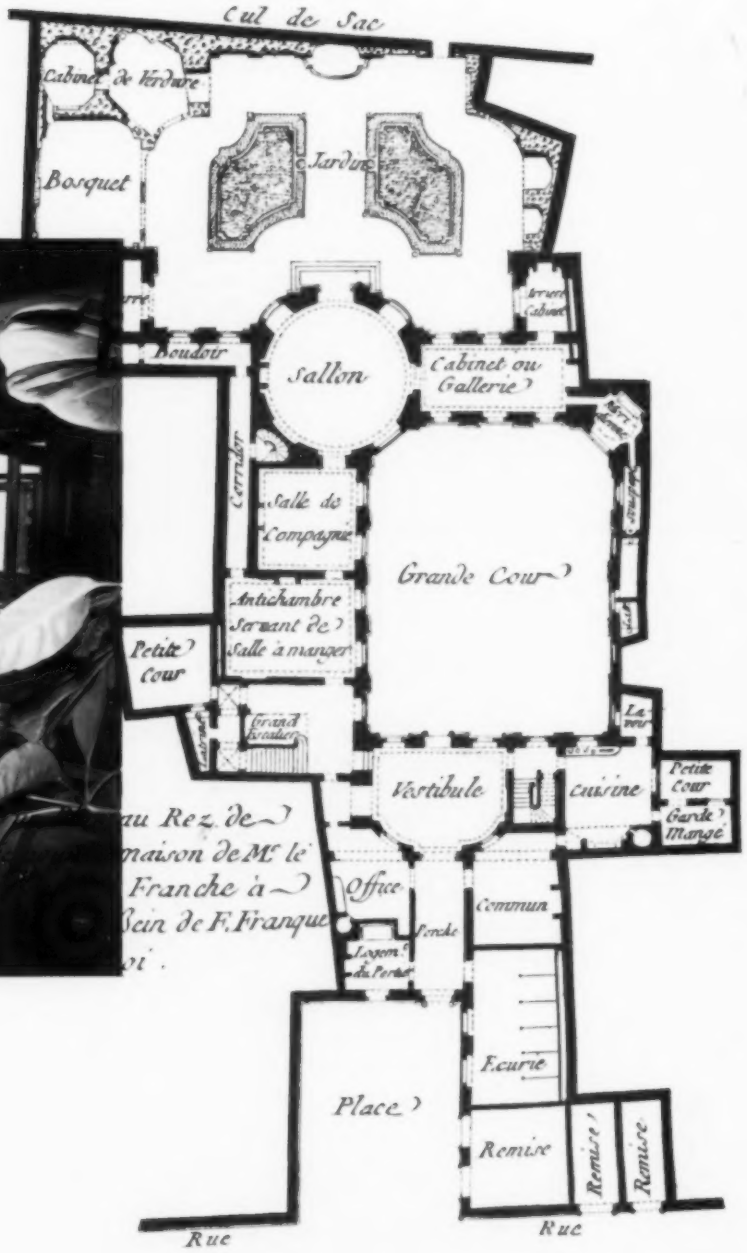

p/a new house-to-site transition

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INSURANCE COMPANY OF AMERICA

Left—Prudential Insurance Bldg., Jacksonville, Fla. Archt.—Kemp, Bunch & Jackson; Engr.—Reynolds, Smith & Hills; Contr.—Daniel Construction Co. Pozzolith Ready-Mixed Concrete supplied by Capitol Concrete Co.—all of Jacksonville.

Below—Prudential Office Building, Minneapolis, Minn. Archt. and Engr.—Magney, Tusler & Setter; Contr.—C.F. Haglin & Sons Co. Pozzolith Ready-Mixed Concrete supplied by Ready-Mixed Concrete Co.—all of Minneapolis.

Left—Prudential Building, Chicago, Illinois. Archt.-Eng.—Naess & Murphy; Contr.—Geo. A. Fuller Co.; Pozzolith Ready-Mixed Concrete supplied by Material Service Corp.—all of Chicago.

Right—Prudential Insurance Co., Los Angeles, Calif. Archts.—Walter Wurdeman and Welton Becket; Engr.—Murray Erick Associates; Gen. Contr.—Wm. Simpson Co.—all of Los Angeles. Pozzolith Ready-Mixed Concrete supplied by Transit Mixed Concrete Co., Pasadena.

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PROGRESSIVE ARCHITECTURE

June 1956

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Volume XXXVII, No. 6

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It's the Law *by Bernard Tomson*

P/A Office Practice ***article continuing discussion of Arbitration and the Architect's Role as Arbitrator.***

It was pointed out in last month's column that, under the Owner-Contractor agreements issued by the American Institute of Architects, the role of the Architect as arbitrator is severely limited. The question was asked "would it be in the interest of all to expand the architect's function as arbitrator and make his decisions final?" If the answer is "yes," the AIA forms require revision.

The "General Conditions" of the Contract of the AIA provide that the Architect shall make a decision on all claims of the Owner or Contractor "relating to the execution and progress of the work or the interpretation of the contract documents." It is further provided that all of the architect's decisions, except those relating to artistic effect, are subject to arbitration. Due to the fact that the courts, in construing the "General Conditions" of the AIA Contract have held that the Architect's right to make decisions in respect to disputes between Owner and Contractor is confined to a narrow area, a revision intended to expand the Architect's function as arbitrator must be broadly written. If the Architect's decisions are to be conclusive and final, any further arbitration must be excluded from the contract. The following clauses are suggested in order to accomplish these purposes:

"Any dispute, claim, or question concerning the execution of and the performance under this contract, including, but not limited to, any matters relating to quantity, quality and artistic effect, extras, and payments to the contractor or subcontractors, shall be submitted to the Architect for arbitration and his decision shall be final, binding and conclusive.

"Any dispute, claim or question concerning the interpretation, construction or meaning of the contract documents, the plans or specifications, or concerning a breach of the contract, shall be submitted to the Architect for arbitration and his decision shall be final, binding and conclusive."

If the Architect's role as arbitrator is expanded and his decisions made final, it is certainly of importance that a procedure be provided in the event that the Architect no longer furnishes services to the project because of incapacitation, discharge, or other reason. The "General Conditions" do not provide for this contingency. If the Architect is discharged by the Owner and a new one selected, it would be manifestly unfair to permit the new Architect to substitute as arbitrator, as the reason for the removal of the original Architect may have been related to a dispute between Owner and Contrator. If, on the other hand, a new Architect has been designated by his predecessor, then there is no reason why he should not have the same status. The following suggested clause is drawn to provide for these contingencies:

"In the case of the termination of the employment of the Architect, the Owner shall appoint a capable and reputable Architect whose status under the contract shall be that of the former Architect, except that in the event of such termination, any dispute, claim, or question which is subject to the arbitration of the former Architect as heretofore provided shall be submitted for arbitration to the American Arbitration Association, pursuant to the rules of said Association then obtaining and the laws of the State of ————. The foregoing exception, however, shall not apply to a successor of the Architect created or designated by him, or to an assignee of the Architect. Such successor or assignee shall have the same status under the contract as the named Architect herein."

•

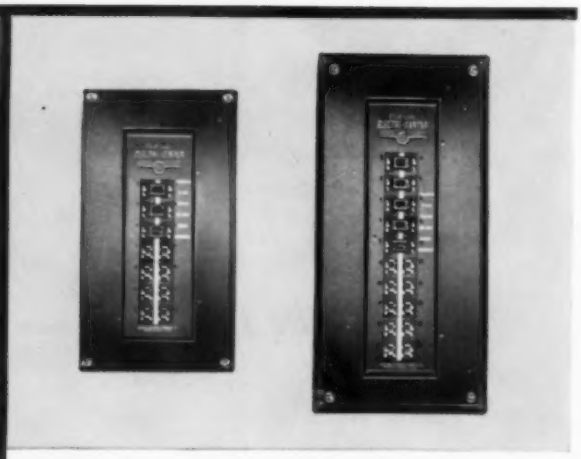
In the event that it is considered advisable to submit certain disputes between Owner and Contractor to arbitration by some person or body other than the Architect, the question was asked in last month's column "would it not be a better procedure for the American Institute of Architects to provide arbitration panels consisting of architects from which to select the arbitrator or arbitration tribunal?"

As pointed out, the standard procedure of the AIA is neither realistic nor effective, as it requires the parties to a dispute to agree upon an arbitrator. Failing such agreement the arbitration is to be conducted by the American Arbitration Association. However, the arbitration panels of the American Arbitration Association contain many members who would not be particularly qualified to determine disputes arising between Owner and Contractor. Of perhaps more importance, they also contain attorneys and members of the construction industry who because of their background might be biased in favor of one party or the other.

The Architect knows the problems of both Owner and Contractor. He is an expert in the field in which the dispute arises and is certainly the most competent and qualified person to determine disputes between Contractor and Owner. There is no reason why the American Institute of Architects cannot under its standard procedure provide an arbitration panel consisting of architects, from which the parties to a dispute are required to select the arbitrator or arbitration tribunal.

A suggested procedure is for the Institute to furnish both parties to a dispute with a list of architects from which the arbitrator must be selected. Each party would select three names from said list. If there was any agreement in the selection, the Institute would appoint that architect as the arbitrator. If no agreement, the Institute would appoint an arbitrator from the panel.

A standard arbitration procedure as described above, is desirable from the viewpoint of the Owner and Contractor as it would insure competent and unbiased determination of disputes. Further, from the Architect's point of view, it would be desirable as a factor in aiding the Architect to achieve the role of leader in the construction industry, which is his appropriate status.



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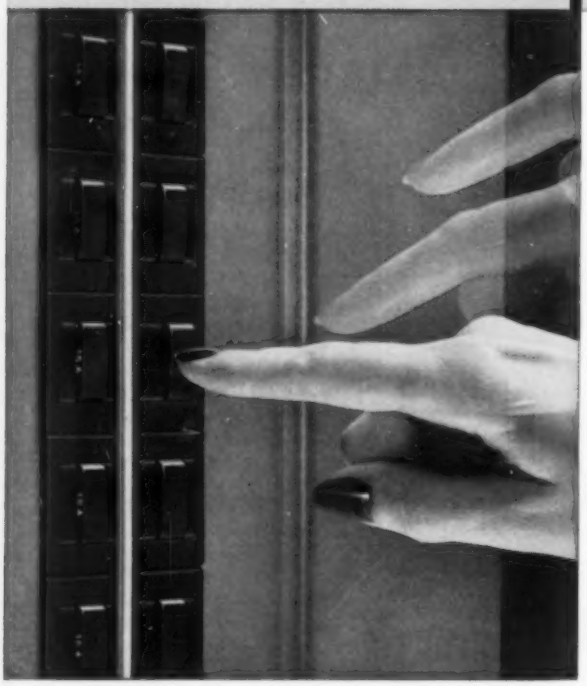

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Mechanical Engineering Critique

by William J. McGuinness

P/A Office Practice *column on mechanical and electrical design in architecture is devoted this month to Preplanned Adequate Residential Wiring.*

In the professions of Architecture and Engineering we have all subscribed to the importance of good electrical planning, the use of electrical labor-saving devices, and the design of adequate wiring. Yet, somehow, in practice these good resolutions have largely been lost in the shuffle. Within the past decade, many houses have been built with 120-v, 2-wire service of 30 amp capacity and not more than four circuits. In some instances, slightly better wiring has been 3-wire, 120/240-v of 60 amp capacity and five or six circuits. A brief look at the *Residential Wiring Handbook* of the Industry Committee on Interior Wiring Design, or even a cursory glance at the amperages suggested below will make the inadequacy of such houses quite dramatic.

Before seeking the reasons and possible correction of this shortcoming, let us consider an industry that has solved the problem we are still trying to lick. Have you ever heard a motorist say, "Before I install a heater in my car I must have larger wiring put in," or, "Every time I turn on my new radio or cigar lighter I blow a fuse"? Most motorists do not even know that an automobile has a fuse! In spite of the fact that almost all cars can be purchased stripped of electrical devices, they are always *wired* to receive and serve them at a later date. In this highly competitive industry, manufacturers have found a way to include the cost of good wiring and sell it to the public. Perhaps the reputation of the company is important, since you will buy a new car 15 years before you will buy a new house—if, indeed, you ever buy a second house. Your next car purchase may well be from the same manufacturer, but the chance that you will buy a second house from the same builder or plan it with the same architect is very slim.

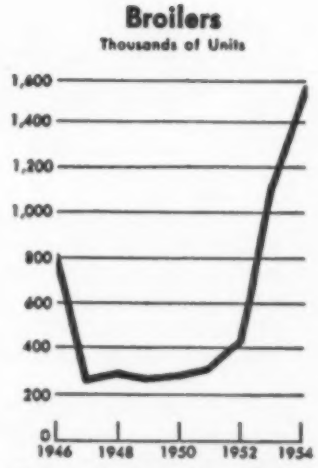
The consumer who expects his car to have wiring suitable for additional equipment, however, seems quite satisfied to install a larger electrical service in his house if he purchases a central air conditioner, an electric range, or a clothes dryer. Having bought the larger service wiring, sized only to serve one additional piece of equipment, he may have to increase the wiring again when the next device is contemplated. Thus in this era of efficiency where one can, for instance, shop for two weeks' provisions instead of shopping daily, vision is lacking in the simple matter of planning for a reasonable expansion of electric service.

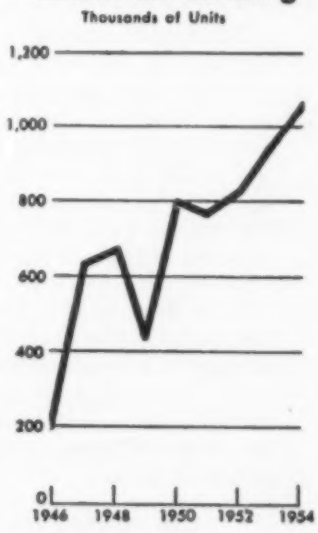
It is not unusual for an owner to have to pay $175 to replace the service-entrance wiring because of a new piece of equipment, even to pay this amount many times over for the addition of various circuits within the house. The investment of $175 (or less) once, when the house was built, might have saved these charges and the makeshift wiring added to a completed house. Labor is the big item; at the time of installation, a small additional investment in copper will provide much greater capacity. Further evidence of the fact that we are talking about a small initial expense is seen when we consider that electrical equipment is usually the smallest item of cost of the mechanical trades in a house. Of the total cost of the house, approximate costs of mechanical equipment, expressed as percentages of total house cost, might be:

heating and air conditioning	10 to 15%
plumbing	7%
electrical	3%

The difference between adequate and inadequate wiring is a small part of a small item.

It may be thought that this is quite a private matter to be handled by the owner and even the architect, as they choose, and indeed it is. Yet the tendency to overload circuits, resulting in great inefficiency, eventually causes hazardous conditions which are a civic responsibility. However lightly the in-





Figures 1 and 2—charts illustrate rapid growth of appliances manufacturers' sales.

Data: Courtesy of Electrical Merchandising

The summer sun pours down as much as 250,000 Btu's of heat per hour on a 1,000 sq. ft. roof of a house at noon on a clear day. Some white shingles can reflect, OUTDOORS, about 55% of the sun's rays; yellow shingles 35%, green 15%, red 14%, blue 5%, black 4%.

White shingles won't always stay white, don't always harmonize with the color-scheme, easily look soiled. So despite the greater efficiency of white (which is true only OUTDOORS), roofs may nevertheless be ANY color; and the house will still be considerably cooler than the outside; IF MULTIPLE REFLECTIVE spaces and reflective surfaces are installed beneath the roof.

The comfort and efficiency of this scientific combination, produced by multiple sheets of aluminum and fiber, air-spaced apart, is remarkable for its effectiveness in repelling radiation, which is responsible for about 93% of all *heat in-flow* down from the roof to living quarters. The surfaces of the aluminum reflect radiation with a 97% rate, and absorb and emit radiation at a rate of only 3%.

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Mechanical Engineering Critique

dividual may take this matter, there are those who consider it a major national problem. The list includes: American Home Lighting Institute; Edison Electric Institute; International Association of Electrical Inspectors; National Association of Home Builders; National Association of Electrical Distributors; National Electrical Contractors Association; National Electric Manufacturers Association; Radio, Electronics and Television Manufacturers Association; American Institute of Electrical Engineers; American Society of Agricultural Engineers; Illuminating Engineering Society.

These organizations sponsor or endorse widespread plans for better wiring. In this project, utility companies in all parts of the country are also participants. It would seem that equipment is available and power obtainable, but that owners just refuse to provide the channels through which the two can effectively operate together.

It is interesting to observe that those closest to the problem, namely the owner and the architect, are not on the above list. It is not always correct to assume that the builder and electrical contractor are members of these associations or possessed of the interest or energy to sell this campaign. So, in the long run, it depends on the owner and the architect to call for the proper wiring for present and future equipment.

Putting the convenience outlets in the proper places so that devices may be plugged in is no great problem. This kind of planning has improved greatly; yet, too often we still see the octopus-like fixture leads that are a sure sign of overload. It is necessary to go beyond this and find out how the outlets are to be served.

A basic specification is suggested from which to build. Consider whether this is not a minimum standard.

Service: 120/240 v, 100 amp or more as required. In many cases 200 amp is not excessive.

Distribution: More than one load center is a convenience and is frequently an economy because this shortens long runs from the service entrance to remote circuits.

Direct Connections to Equipment: These should be served directly and controlled from the main switchboard or from a convenient local panel box.

Recommended circuit capacities:

	Amp
range	50
washer	20
clothes dryer	30
furnace	20
dishwasher and waste disposal	20
	140

A second group might easily be considered:

	Amp
attic fan	20
conditioner	20
freezer	20
bathroom heater	20
workshop	20
	100

Appliance circuits: To kitchen, laundry, and utility room:

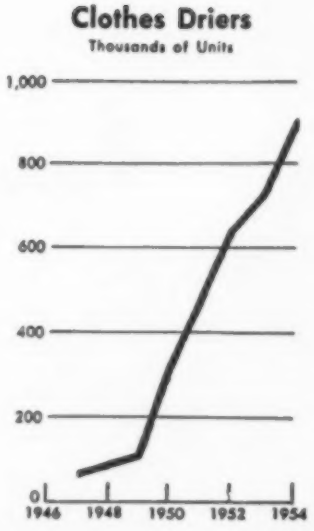
	Amp
grill	7
egg cooker	5
hand iron	9
roaster	12
coffee maker	8
toaster	9
	50

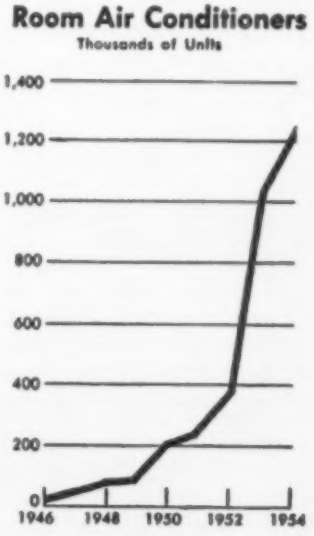
General-purpose circuits: Lights and minor devices, 5 circuits @ 15 amp = 75 amp. In addition to lights the following group of items may be plugged in:

	Amp
television	2
3 radios	3
sewing machine	1
razor	2
5 clocks	10
	18

The owner is advised to make his own list. There are more than 100 items that can be connected to appliance and general-purpose circuits. It is fortunate that not all of the equipment is in use at once, so that the entrance wiring does not have to be as large in capacity as the *sum* of the branch circuit loads. Beyond the provision for all these items, most far-seeing planners recommend an additional 30 or 40 percent reserve for electrical devices as yet unknown.

The effect of the increased production of four major appliances in a recent eight-year period on the national power demand may help us judge the rate of increase for future planning.





Figures 3 and 4—charts illustrate rapid growth of appliances manufacturers' sales.

Data: Courtesy of Electrical Merchandising

there's more vinyl in every tile of

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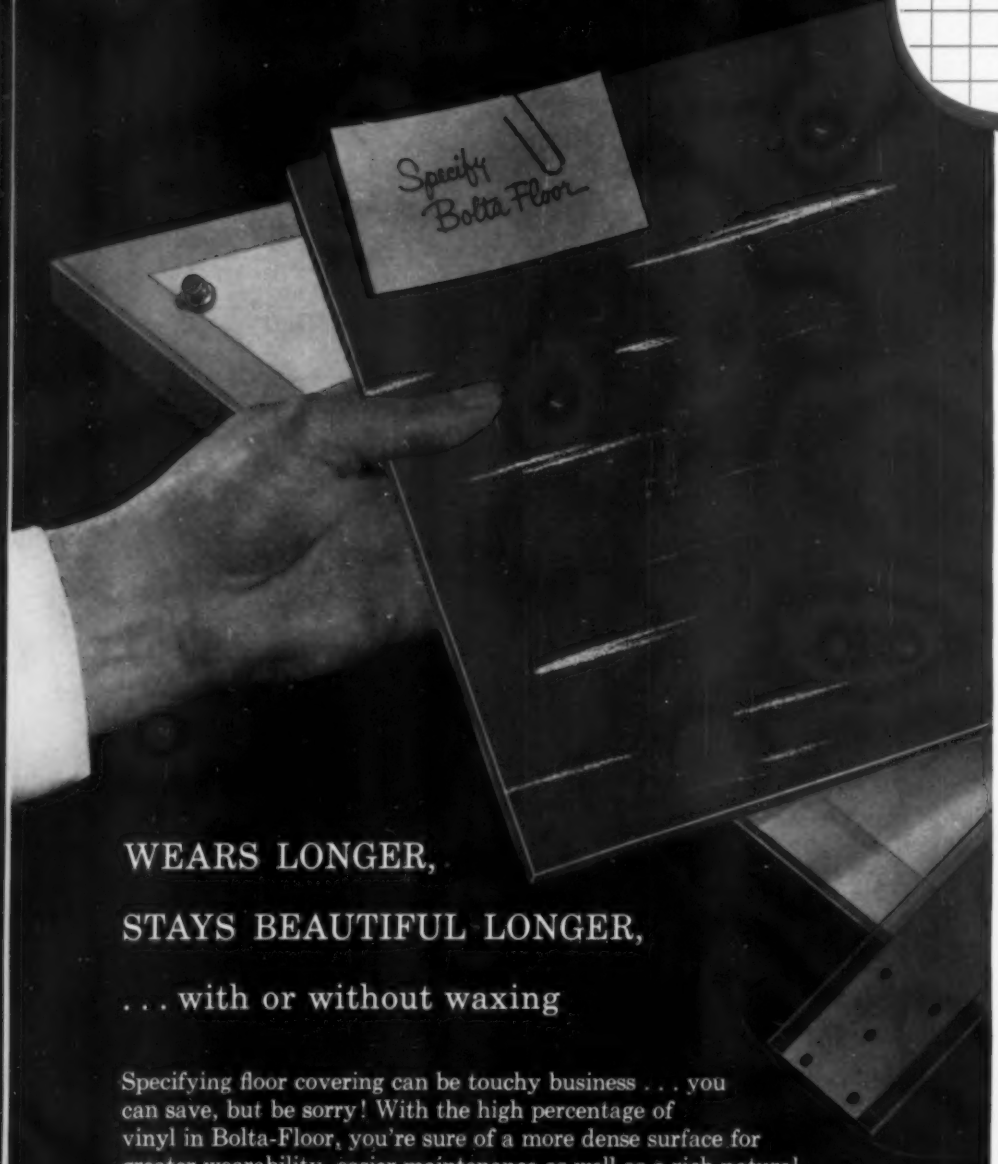

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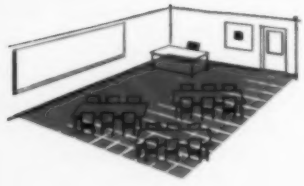

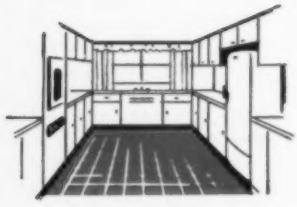

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Characters in Search of An Architect by Edwin Gilbert

Being the confessions and revelations of a novelist whose recent book about the architectural profession has provoked a most unexpected avalanche of interest from the public.

Now that *Native Stone*, the new novel about architects, has become something of a national success, the Author, nudged by the Editors of P/A, can undertake to reveal certain discoveries he has made about what the general public thinks of architects.

It is no secret that most architects are inclined to believe that people are not interested in them or their profession. In fact, when I finished my novel, a Connecticut architect said to me: "You only made one mistake: you wrote about architecture." Another man of similar lugubrious cast, remarked: "The public, when it comes to architects, couldn't care less!"

Early comments like these did not fill me with exaltation. And when the novel was finally published, I still could detect nothing of the true nature of public opinion. At first it was the literary critics-architects who voiced their sentiments, but these reactions only managed to confuse me further by their very inconsistencies. A Boston architect wrote: "I was so many times carried away in retrospect by your astutely keen observations. I had lived so many of the experiences in reality. Every architect will enjoy reading your excellent novel; firstly though—I hope a million laymen read it." I could only glow with satisfaction. Yet, in the next day's mail another architect more cynically observed: "If I encountered in my practice as many amorous females as those in your novel, I would gladly lower my fee. And, I would like to add, that it was hard for me to believe that people can be as fascinated with the profession as you suggest. . . ."

My confusion was further aggravated by the complaint of one critic who lamented that the book contained so much "erotic entertainment" while another stated that "the author does not dwell extensively enough on realistic architectural problems"; while yet a third said: "Bless you, Mr. Gilbert, for investing your story with a human element that will, I hope, bring about a new attitude toward architects who are too often regarded as stern and unrelenting robots at the drafting board." A case of acute vertigo afflicted me when I heard that one officer of the AIA "objected to the language" in the book, while another officer of the AIA wrote to me saying that after reading the book he had given it to his son with the knowledge that "it might help him become a finer architect."

I remained in darkness.

Slowly, then, the letters from the reading public began to fill my mail box. It is this reaction which helped resolve my doubts. Did these readers write about eroticism or love or the struggles of young architects? Did they praise me for the drama of the narrative or did they challenge me about the philosophy of architecture inherent in the book? No, nothing like it! What, then, was the public's reaction?

It can best be shown by quoting excerpts from among the countless letters I have received.

From a Detroit housewife: "After hunting for a house for over a year, we were especially impresed by your hero's tirade on Drearyville U.S.A. (the name given for contractor-designed, picture-window, jerry-built developments). Anyway we are now seriously looking for a good architect who can build us a house we won't be ashamed of. Thank you for not only a very entertaining story, but also for opening our eyes."

From the owner of a large lumber company in Connecticut: ". . . to back up my remarks about *Native Stone*, I have ordered 10 more copies, which I am sending as gifts to friends of mine who are giving birth to a lot of bad ideas about houses and buildings they are proposing for the near future. This book hits the nail squarely on a lot of heads that need hitting."

Another letter, this one from a veterinarian in New York State, concludes by saying: ". . . reading your book when we did was a lucky coincidence. We are planning a new home and quarters for my practice. A contractor friend of mine convinced us that we'd be sparing ourselves headaches and money if we went ahead without an architect. Frankly, we were sold on the idea. But we must admit *Native Stone* got us so steamed up and stimulated about architecture that we finally consulted an architect who is now preparing designs and plans, and we hope to be able to move in by early summer."

From a junior executive in a San Francisco suburb: ". . . for more than two years I have put off action on the building of an extensive addition to our house. Within less than a week after reading your absorbing novel, we called our architect and gave him the green light."

A similar reaction is expressed by a prominent New York attorney: "We have been reluctant and at cross purposes about proceeding with the building of a house in the country. It did not occur to us until we read your enjoyable and informative novel that we could build a contemporary house that did not have to look like a glass matchbox to be handsome or livable."

Bankers, ostensibly a flint-hearted group of citizens, can apparently become tender on occasion, as this letter testifies, coming as it does from one of the directors of a Massachusetts bank: "I finished *Native Stone* this past weekend, and allow me to say that I found it so inspiring that my entire outlook on architecture has been revised."

From the chairman of the building committee of a school in southern Texas, I received this communication: "Your book could not have come to my attention at a more timely moment. At least, it has surely unified our board once and for all, and our search for the right kind of architect has taken a new and constructive course."

And lastly, this engaging letter from the wife of the owner of a wholesale plumbing and heating company in Long Island: ". . . you might be interested to know that my husband, for reasons of his own, has gone around the house for years complaining about architects. I gave him *Native Stone* to read after I'd finished it. It's a long book and he doesn't have much time to read. But he went through it from cover to cover. After living the education and experiences of the architects in your story, he only said one thing: 'Well, from now on I take my hat off to those guys!'"

Thus it goes. The mail from the reading public grows daily, and the telephone calls become more frequent. Most recently I have even been asked by a number of people to recommend an architect to them; doing so would prove to be a most unexpected and pleasurable therapy for a novelist who was warned that the world was quite indifferent to architects and architecture.

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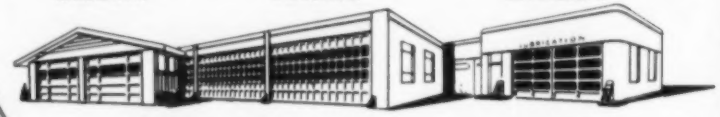

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REINHOLD

Capitol east front

That eternal vigilance demanded of all who would preserve our architectural heritage dictates more letters! Those who have already appealed to Congressmen to oppose tampering with the east front of the Capitol in Washington now are urged to write at once to Arthur Brown, Jr., San Francisco; John F. Harbeson, Philadelphia; Henry R. Shepley, Boston; Roscoe De Witt and Fred L. Hardison, Dallas; Alfred E. Poor and Albert H. Swanke, New York; Jesse M. Shelton and Alan G. Stanford of Robert & Company Associates, Atlanta. These architects and engineers are announced as consultants to "The Commission For *Extension of the U.S. Capitol"—and may yet be persuaded to advise leaving it alone.*

C. M.

miss Cook's Tour of duty

Dear Editor: Do Architects read and write? The AIA publishes each month in its *Journal* carefully selected excerpts from letters, talks, and publications which the Institute believes shows erudition, at least, for two of the three R's, among Architects.

If you would direct this same question to Miss Ruth Cook, Librarian of the Department of Architecture in the Harvard Graduate School of Design, she would point to some thousands of books, pamphlets, and folios as proof that the Architects write. (The extent to which they read, she may admit, is debatable.) The major portion of this library has grown under her continuous direction since 1919, to where it now rivals the best; perhaps second only to the famed Avery Collection at Columbia. Loyally, Miss Cook believes that Harvard's architectural graduates have distinguished themselves beyond comparison — and doesn't this mean, in part, a superior library?

After 36 years, Miss Cook is retiring from her guardianship. No one else in the Department has witnessed over so long a period the tumultuous changes in the profession, programs, policies, faculty, and deans. She has survived innumerable *fêtes charrettes*, the advent of girls (!) as students, a domestic faculty as well as an international one, classic architecture and contemporary work. Her library and catalogs reveal that change alone remains constant as the denominator of architecture.

According to the *Architectural Alumni Catalog* of 1932, Miss Cook's opportunity for a "grand tour" of the Continent in 1914 was frustrated by outbreak of World War I, so, on her retirement, several hundred alumni of every Class of the past 36 years have reached into their pockets to provide a suitable gift. Her tour of duty at Robinson Hall being completed, Miss Cook now begins her own Cook's Tour around the world, provided by the Harvard architectural alumni. Perhaps she will wish to see *en situ* the architecture and places so well documented in her Library—perhaps she will want to avoid them (and architects) for a while.

It is not known whether this will be a Busman's Holiday with an architectural guidebook in hand. How Ruth Cook may escape architecture and (her) graduates in every corner of the globe is not known. Alumni all over the world *will* be alerted!

In addition to the tour, Miss Cook has been presented by the architectural alumni with a purse of $1000, to make certain that no pages need be skipped in her guidebooks.

REGINALD R. ISAACS
Cambridge, Mass.

welcome approval

Dear Editor: For me, the April issue is the most interesting I have received.

(Continued on page 14)

p/a views

(Continued from page 13)

If for no other reason, I would write to commend you for the Scandinavian Design Cavalcade, especcially the addresses (INTERIOR DESIGN DATA).

I enjoyed your comments on criticism (P.S.). As an American, it appears to me that Americans are singularly averse to criticism and that they are impeding their progress in every area. SALLY HUNTER
Bloomfield Hills, Mich.

for general contract

Dear Editor: Our attention has been called to an article in February 1956 P/A, page 11, wherein the author advocates the awarding of separate contracts for the various portions of the work to be done as compared with awarding the entire construction project under one general contract.

It should be obvious to those familiar with construction that experiences of the industry have demonstrated that maximum efficiency in the construction of a project, which requires interlocking operations, is secured when undivided responsibility for its execution is placed upon an experienced and competent general contractor, through the award of one general contract.

Undivided responsibility on the job will produce the lowest ultimate cost to the owner, insure completion of the project on schedule, permit the general contractor to exercise fully his primary function of creative management, assure quality construction, maximum efficiency, a uniform labor policy, co-ordinated construction safety measures, and protect the owner from suits.

It appears to us that the advantages of the all-inclusive general contract outweigh by far those alleged to accrue under the separate-contract system. JAMES D. MARSHALL
Executive Director,
The Associated General
Contractors of America

plea seconded

Dear Editor: A cheer for Ray Harvey, whose letter appears in February 1956 P/A *(pages 13-14)*.

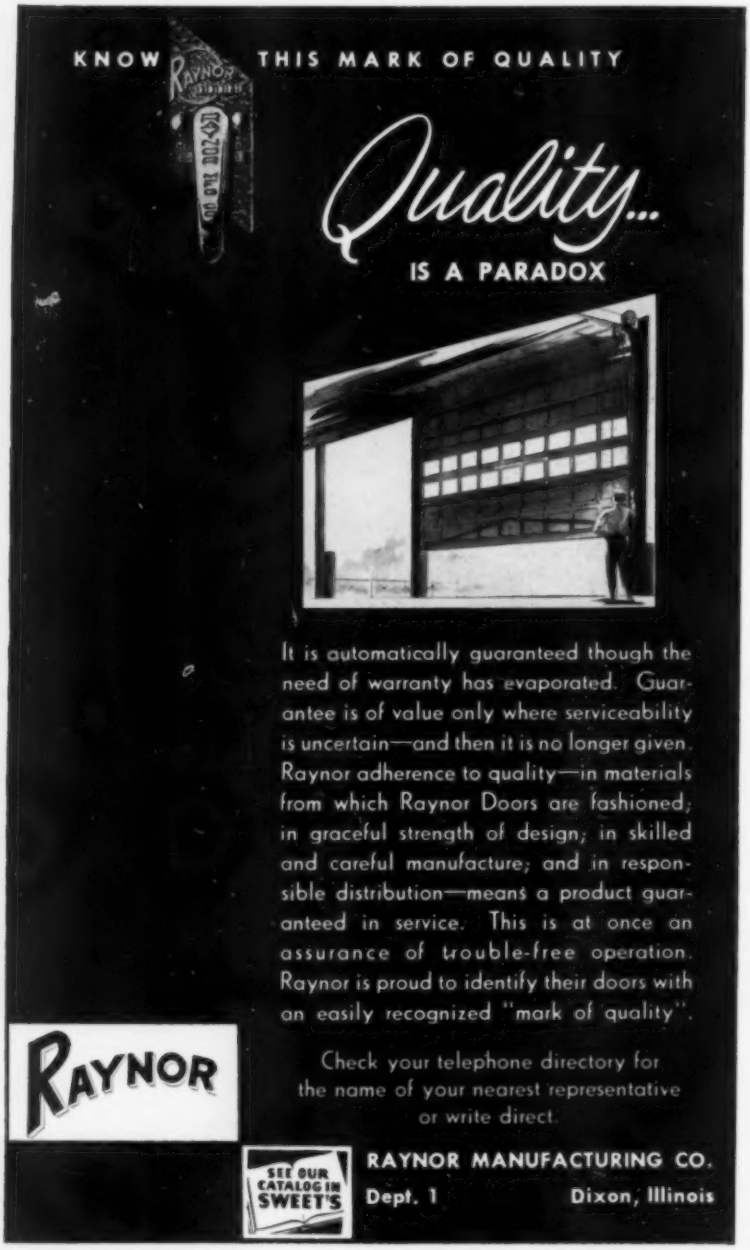
His words needed saying!

I have often wondered how many prospective clients have found themselves hopelessly at odds with an architect, due to his disregard of budgets and his insistence on nurturing his own ego, rather than concentrating his design efforts toward interpreting his clients' expressed desires.

These are the people who are left with a sour opinion of architects, and no choice but to buy a builder's stock split-level.

Could this explain in part the depressing record that architects have made in the field of residential design? FIELDING L. BOWMAN
New Canaan, Conn.

(Continued on page 16)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p/a views

(Continued from page 14)

awards presentation

Dear Editor: Instead of commenting extensively upon the character of the buildings submitted for the Third Annual P/A Designs Awards Program, may I congratulate you upon the excellent presentation of this material in your magazine. The freshness of the architecture is reflected in, and enhanced by, the manner in which the various buildings and designs have been shown to the subscribers of your magazine. There are many who may submit a complete analysis of the trends displayed in this program. I can agree with those who are certain to indicate that this new architecture is very fine in its expression of plastic forms and is rapidly approaching a national movement in architecture.

ERNEST PICKERING
Cincinnati, Ohio

liked January survey

Dear Editor: Just wanted to let you know that I found your January issue of PROGRESSIVE ARCHITECTURE, with all the drawings of new architecture to come which you had selected, to be very splendid. I want to compliment you on an excellent issue.

ROBERT W. VAHLBERG
Oklahoma City, Okla.

designs to vary

Dear Editor: In your January issue you honored with an award citation a charming little house by Designer Robert Geddes and Architect Melvin Brecher. It was described as the first unit of a group of houses by these gentlemen. Alas, the facts are otherwise and the house must stand alone on its own two retaining walls to be judged.

When completed, there will be four houses in this little oasis of contemporaneity, all by different designers. The first was designed by Architect Frank Weise several years ago. Under construction are two: Geddes & Brecher's and my own; the fourth is still on the drafting board and is being designed by Engineer William Taylor.

Thus, the charming homogeneity of the published project will, in fact, be replaced by (charming or otherwise) diversity. IRVING J. MAITIN
Philadelphia, Pa.

comment on citation

Dear Editor: It's rare that I write a letter to the Editor, but I would like to comment on the Little redevelopment plan in January 1956 P/A *(pp. 78-79)*.

The principal feature of this plan is Building 11, which, if you are familiar with Cleveland, faces due west, something that is almost murderous in this part of the world. When I first came to Cleveland, I had the misfortune to live in a four-story apartment building facing due west, with a balcony. You will notice that

(Continued on page 20)

•General Telephone Office Bldg., San Angelo, Tex.
Architects: Pace Associates, Chicago
Plumbing Contractors: Bollinger & Sames, San Angelo

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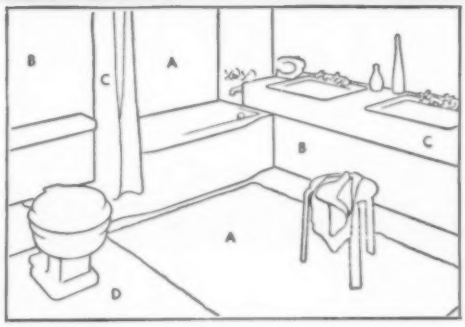

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(Continued from page 16)

these buildings feature balconies. I found that such balconies were totally unusable because they are in the path of the prevailing winds, which pick up the dust from the blast furnaces down in the flats; and the dust precipitation is so bad as to make any balcony at that height unusable. Also, I found that the west sun, even with a 12-foot roof, was almost unbearable in summertime.

Studies of dust precipitation in relation to high buildings indicate that the higher the building and the flatter the surface exposed to the prevailing winds, the more dust is deposited. Some of the supplementary buildings are laid out completely without regard to orientation.

The third point which seemed to me pertinent, is that if you were familiar with Cleveland, the thought of building in that price bracket in urban redevelopment without a complete subsidy of the rents would price the potential displaced people completely out of the market. The cost of such a structure could only be borne by renters in the Shaker Heights district.

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definite need

Dear Editor: "Free-Lance Specifications—Today and Tomorow," by Joseph A. McGinniss *(January 1956 P/A)* shows a definite need, one that I find heartening because this is just the type of business I have been contemplating. For some time I have seen the need for just such a service to architects. In most of the offices where I have worked, I was the specification writer and (as the article points out) I could have used such a service to take a load of work off my desk.

Since I prefer specification writing to drafting and design, I take hope that perhaps I can formulate such a service in this area.

ALBERT F. KEEGAN
Reading, Pa.

report applauded

Dear Editor: Thanks for your P.S. *(January 1956 P/A)* on Hermann Field (I have just now seen it). All of his many friends and acquaintances who see it will be eternally grateful and all of your readers will appreciate this latest report of a series in which you have made so fine a contribution to humanity.

JOHN RANNELLS
Philadelphia, Pa.

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ARCHITECT: *Eggers and Higgins, Architect*
CONTRACTOR: *George A. Fuller Co.*

KAWNEER METAL WALL *one responsibility from inception through installation*

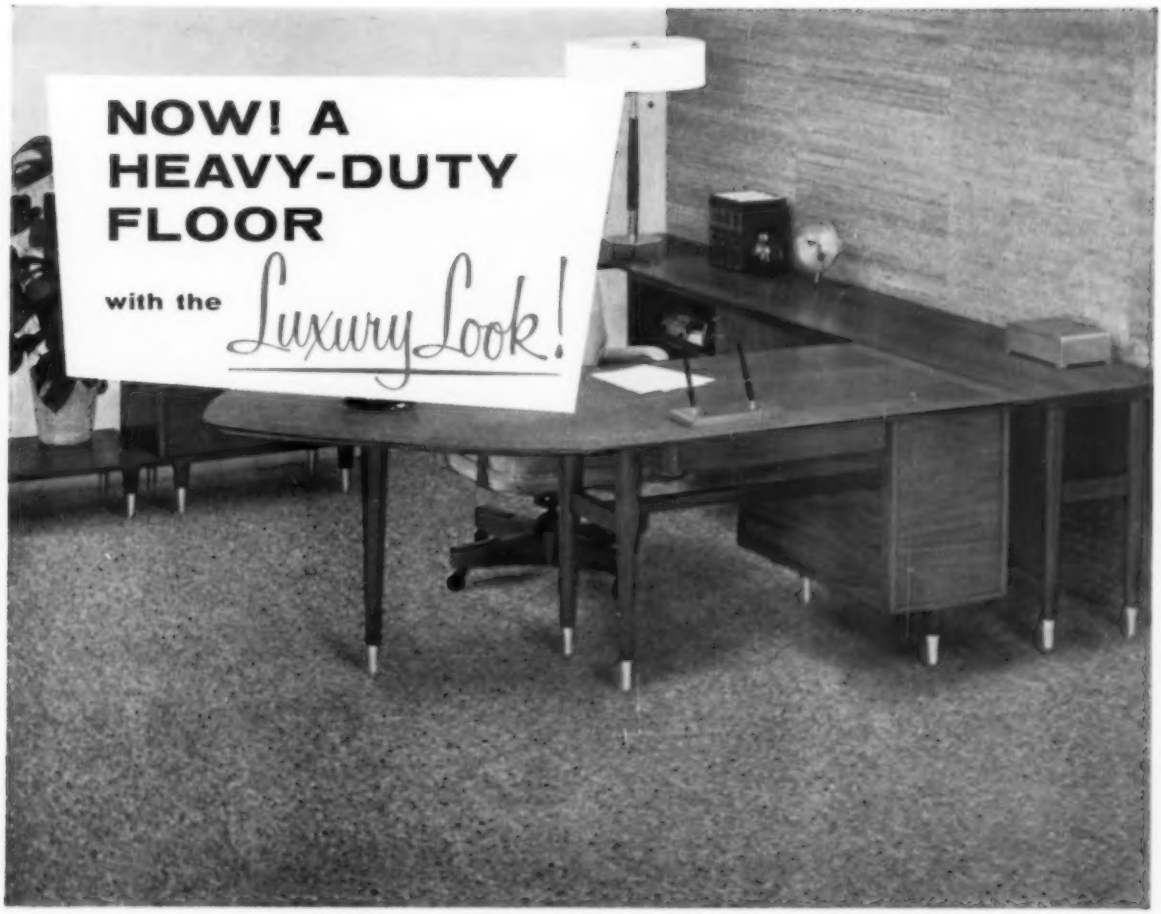
Other Kawneer metal wall jobs:

Tishman Buildings, *Los Angeles*
Equitable Life Building, *San Francisco*
Insurance Exchange Building *Oakland*
Imperial Oil Co., *Sarnia, Ontario*
Newark Center Building, *Newark*
Kaiser Aluminum, *Ravenswood, W. Va.*

The new Mutual Benefit Life building in Newark, N. J., is another outstanding example of Kawneer Metal Wall. Years of creative engineering and production in the field of architectural metals has culminated in a new service for architects . . . a new concept in metal wall construction. This building is an expression of Kawneer's ability to engineer a curtain wall to fit this architect's individual design. Kawneer accepts the complete responsibility for engineering, manufacturing and installation. Special weather-tightness features, adequate provision for expansion and contraction, and tested prefabrication methods assure the architect and contractor of complete client satisfaction. For further information write: Metal Wall Department, Kawneer, Niles, Michigan.

Write for folder describing Kawneer services and metal wall jobs.

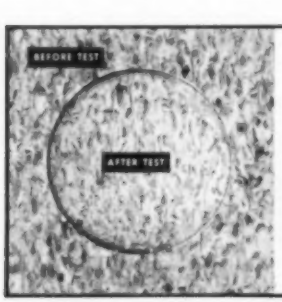
50TH ANNIVERSARY
Kawneer
General Offices
NILES, MICHIGAN
ARCHITECTURAL PRODUCTS DIVISION
1906–1956



GOLD SEAL SEQUIN® INLAID LINOLEUM ⅛" GAUGE IN RICH DARK BROWN. "CONTINENTAL FURNITURE" BY STANDARD.

New, exclusive Gold Seal "Sequin" Inlaid Linoleum brings you a new kind of beauty for commercial installations. It presents a sweeping, virtually seamless expanse of wall-to-wall richness. Seven decorator-styled colors provide ample selection to match any room decor!

This rugged product is highly resilient . . . quiet and comfortable underfoot. Its satin smooth surface seals out dirt and resists stains which means maintenance will be easy. Give *your* clients all these extra advantages—specify new Gold Seal "Sequin" ⅛" Inlaid Linoleum.



Abrasive Wheel Test proves "Sequin" "looks like new" through long service life!

The circular "After Test" area is the result of applying the abrasive wheel to the "Sequin" sample. See how it *has worn well through the linoleum*—and yet the pattern is still there, as clear and sharp as ever! Compare it with the "Before Test" area. *You can't tell the difference!* Write to Architects' Service Department, Congoleum-Nairn Inc., Kearny, N. J., for further information and samples.

SPECIFICATIONS

6-ft. wide yard goods. ⅛" gauge, burlap backed. Install over suspended wood or concrete subfloors. Available in: grey, green, dark brown, white multi, grey mix, taupe, beige. Also made in standard gauge for residential use —in 16 colors.

FOR HOME OR BUSINESS:

INLAID BY THE YARD—Linoleum • Nairon® Standard • Nairontop®
RESILIENT TILES—Rubber • Cork • Nairon Custom • Nairon Standard
Vinylbest • Linoleum • Ranchtile® Linoleum • Asphalt
PRINTED FLOOR AND WALL COVERINGS—
Congoleum® and Congowall®
RUGS AND BROADLOOM—LoomWeve®

FOR THE LOOK THAT'S YEARS AHEAD
Gold Seal
FLOORS AND WALLS
®Trademark

© 1956 CONGOLEUM-NAIRN INC., KEARNY, N. J.

Kitchen work is easier when there are no sharp shadows.

Kirlin SYSTEM

BUILT-IN *Lighting*

Built-ins..

A feature of the contemporary home

In the modern home the rooms have "built-ins" – buffets and bars in the living rooms – ovens and refrigerators in kitchens – vanities and dressers in baths and bedrooms, etc. . . . Built-in Kirlin Lighting Fixtures also have become a feature of the "well-done" or architect-designed room because the light is softly diffused by a mirror-brite reflector through patented prism lens, and shows furniture, fabrics and features at their best. . . . Most rooms require "over-all" lighting sometimes and, some rooms, kitchens and baths, for example, demand it at all times.

You have many good reasons for specifying Kirlin built-in fixtures, but consider only these two (one practical – one financial): (1) Nothing dangles from ceiling to interfere with decor or that requires dusting; (2) Installed cost is less!

Candle-light for dining, of course, but over-all lighting is best when cleaning.

OTHER REASONS FOR SPECIFYING KIRLIN

- GlasSurfaced aluminum reflectors
- Spread-type lens, stays clean
- Stainless steel hinged doors
- For fluorescent or incandescent lamps
- Available in many types and all sizes
- Easily installed between joists
- In stock at leading electrical stores
- Retail — from $14.00
- Underwriters Laboratory and I.B.E.W. labels

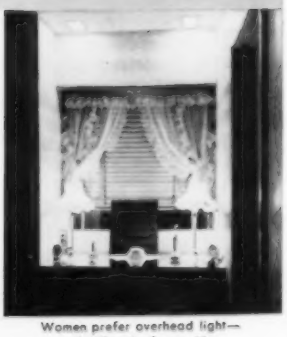
No dangling fixtures interfere with recreation room activities.

LARGEST SELLING RECESSED LINE—MILLIONS IN USE EVERYWHERE

The KIRLIN CO. 3435 E. JEFFERSON AVE. DETROIT 7, MICHIGAN

Furniture and fabrics show best under overhead lighting.

Built-in porch lights are weather-protected



Women prefer overhead light—well diffused—for vanities.

EASY-TO-CLEAN TERRAZZO floors strike cheerful note in Philadelphia General Hospital

TERRAZZO FLOOR BEAUTY costs less every year

Where foot traffic is heaviest, and handsome appearance is important, Terrazzo floors are your best choice in the long run. No other floor will stay new-looking longer, and yet need so little maintenance to keep it good-looking day in and day out.

Architects like the wide range of design and color possibilities Terrazzo offers — especially when it's made with Atlas White Cement. To give your floors the beauty of marble and the durability of concrete, specify Terrazzo. For better-looking Terrazzo, specify Atlas White Portland Cement because it's *quality-controlled* during manufacture to give uniform performance, color and durability.

WT-64-C

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UNITED STATES STEEL (USS) CORPORATION SUBSIDIARY

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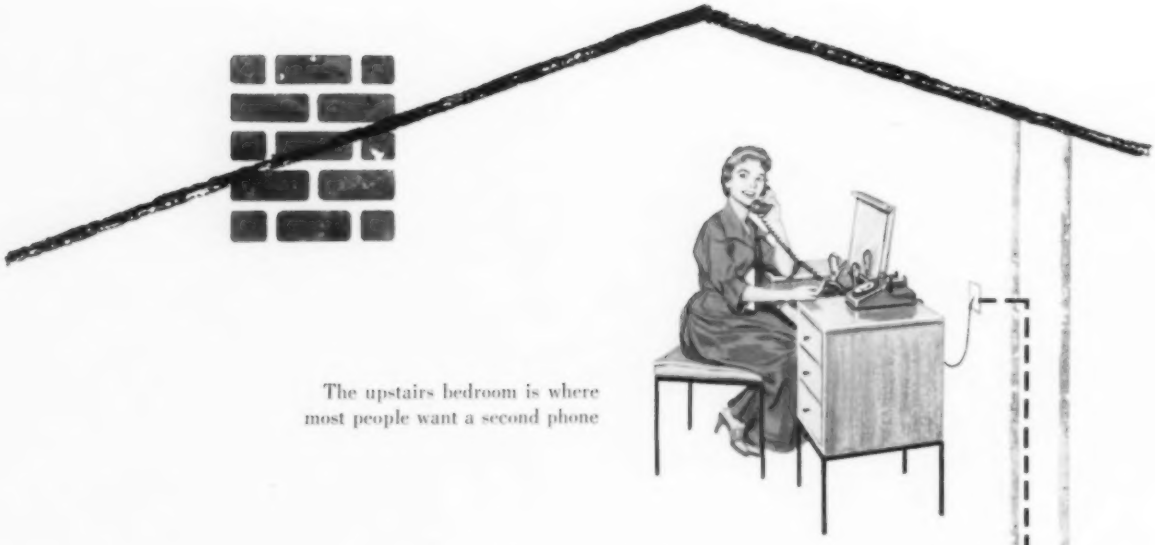
Atlas® White Cement

FOR BEAUTY AND UTILITY • FOR TERRAZZO, PAINT, FACING, STUCCO

United States Steel Hour—Televised on alternate Wednesdays—See your local newspaper for time and station.



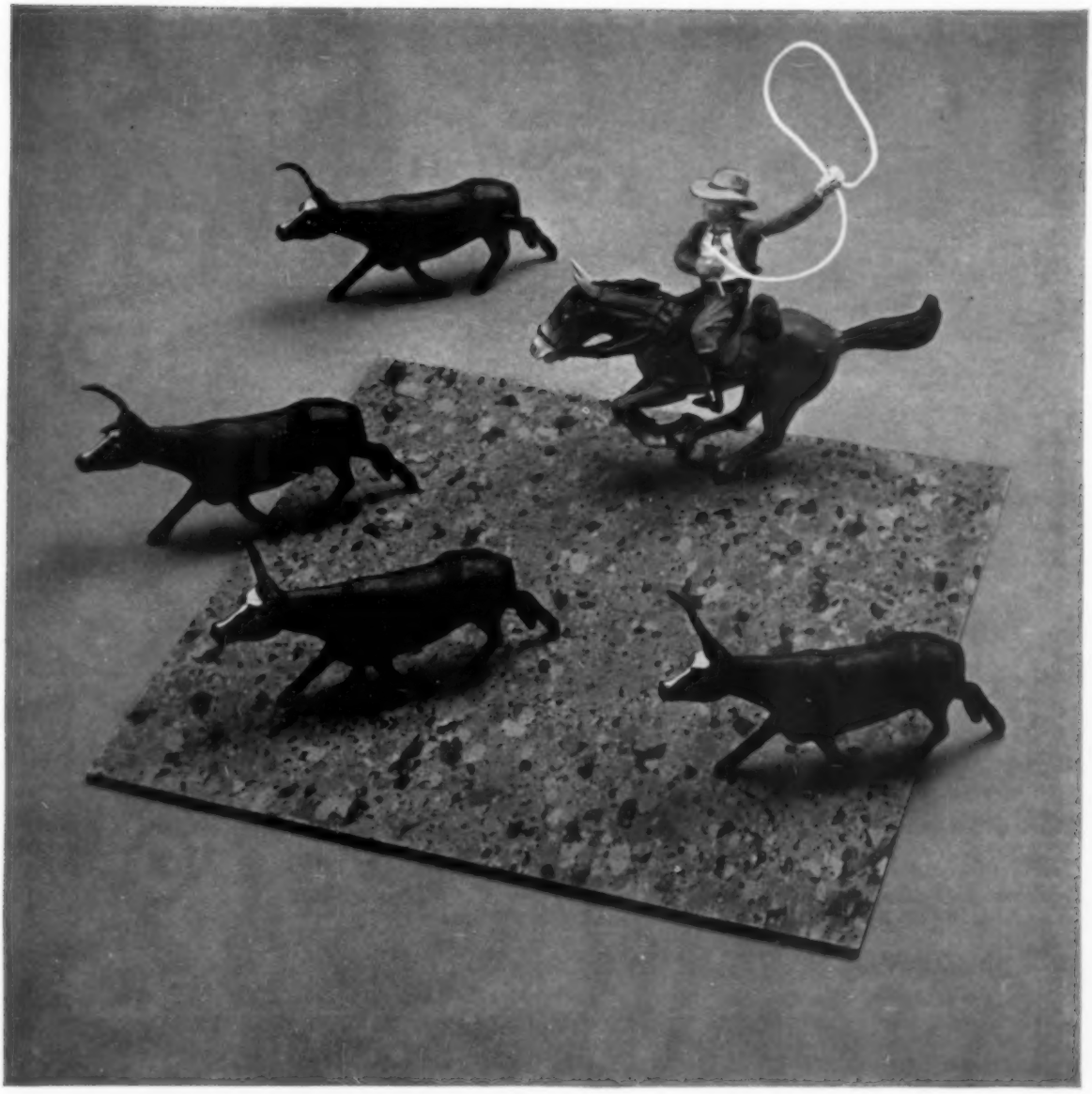
The upstairs bedroom is where most people want a second phone

An outlet at a convenient height is ideal for kitchen installations

Upstairs . . . downstairs . . . wherever the modern family sleeps, works, or plays, good planning calls for built-in telephone outlets . . . and concealed telephone wiring.

BELL TELEPHONE SYSTEM

Your Bell telephone company will be glad to help you work out economical concealed wiring installations. Just call your nearest business office and ask for *Architects and Builders Service*. For details on home telephone wiring, see Sweet's Light Construction File, 8i/Be. For commercial installations, Sweet's Architectural File, 32a/Be.



Durability in floor tile

If you want extra serviceability under heavy foot or industrial traffic . . . or floors designed especially to resist grease, alcohol, acids, alkalis, oils, chemicals and foodstuffs . . . Kentile, Inc. brings you the features you need, in a wide choice of decorative styles. Each of the tile types offer the added advantages of uniform thickness, accuracy of cutting, trueness and clarity of color, surface smoothness, built-in durability and dimensional stability... another reason why this is the world's most popular line of resilient tile flooring. Tile illustrated is Corktone Kentile.

KENTILE, INC. America's largest manufacturer of resilient floor tiles

KENTILE Asphalt Tile, Carnival Kentile, Corktone Kentile/**KENCORK**, Cork tile for Floors and Walls/**KENRUBBER**, Rubber Tile/**KENFLEX**, Vinyl Asbestos Tile, Carnival Kenflex, Corktone Kenflex/**KENFLOR** Vinyl Tile, also available by-the-yard/**KENROYAL** Vinyl Tile/**SPECIAL KENTILE**, Greaseproof Asphalt Tile/**THEMETILE**, **KENSERTS**, Decorative Inserts/**KENCOVE**, vinyl wall base/**KENBASE**, wall base.

Advertising and Circulation Office in the new building of the Camden, N. J., *Courier-Post*, designed by Louis T. Klauder and Associates, Philadelphia, architects. General contractor: Hughes-Foulkrod Co., Philadelphia.

LONGSPANS PROVIDE CLEAR WORK SPACE IN CAMDEN, N. J., NEWSPAPER PLANT

A maximum of unobstructed floor space was the main requirement when the Camden, N. J., *Courier-Post* built a new plant in Delaware Township, outside Camden. The architects provided open space, uncluttered by an excess of supporting columns, in the advertising and circulation departments, city room, composing rooms and shipping and storage areas, by specifying Longspan Joists in the roof structure.

The one-story building, with brick exterior, measures 450 ft by 160 ft. Well over 100 tons of Bethlehem Longspans, 55 ft long, were used in its construction.

The use of Bethlehem Longspans provided other

important advantages, too. Building costs were lowered, for the Longspans reached the job-site fully fabricated, clearly marked and ready for instant placing. And installation of overhead lighting and ductwork was greatly simplified, as pipes and conduit were run right through the open webs.

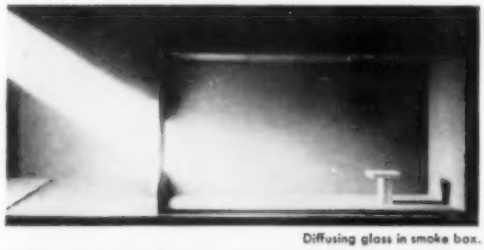
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM LONGSPAN STEEL JOISTS

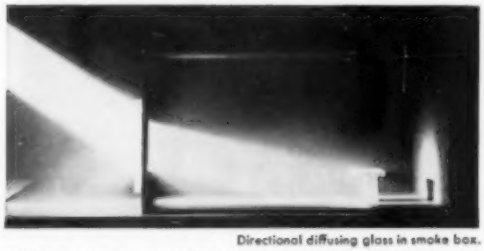
BETHLEHEM STEEL

THERE'S MORE TO *daylight* THAN MEETS THE EYE

"Smoke Box" photo—window glazed with clear glass.



Diffusing glass in smoke box.



Directional diffusing glass in smoke box.

Stop Glare and Heat with Light Diffusing Glass

Like other natural resources daylight needs to be controlled to be of greatest benefit. "Raw" daylight seldom meets specific lighting needs, since it contains a host of unwanted factors that cause discomfort and inefficiency. Obtain the results you want by specifying a glass "visioneered" to meet your requirements.

Good daylighting can be achieved with a handsome, modern, diffusing pattern which disperses softened light deep into interiors, provides comfortable, even illumination without harsh glare and sharp contrasts that cause costly eye fatigue. And if excess heat is a problem, keep interiors more comfortable with Mississippi Coolite, heat absorbing, glare reducing glass, which absorbs up to 50% of solar heat rays.

In your new building or remodeling projects gain all the benefits of natural light without the drawbacks. Control "raw" daylight by specifying Mississippi Glass. Available everywhere in a wide variety of patterns and surface finishes, wired and unwired, all "visioneered" to solve your daylighting problems.

Write today for free catalog No. 56G • Address Department 8.

MISSISSIPPI GLASS COMPANY

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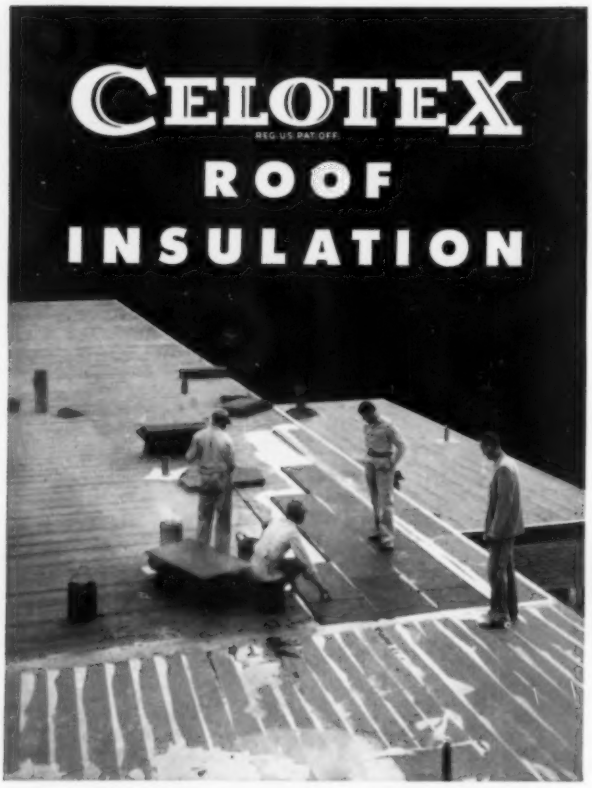
WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

Proved by the test of time...
Preferred for today's roofing needs!



31 YEARS ON THE JOB!
Woodward and Tiernan Printing Co., St. Louis, Missouri. 225,000 square feet of Celotex Roof Insulation applied in 1925 . . . and still doing a job!

SPECIFIED FOR EVINRUDE!
Evinrude Motors Building, Milwaukee, Wisconsin. 300,416 square feet of Celotex 1" Preseal Roof Insulation used. Roofing Contractor: F. J. A. Christiansen Roofing Co., Inc., 2139 West Purdue Street, Milwaukee, Wisconsin.

Only CELOTEX Roof Insulation provides all of these important features:

Made from tough cane fibers. The only roof insulation made from genuine Louisiana cane fibers . . . long, tough, durable.

Controlled density and thickness. Quality control insures exact, even density . . . providing uniform insulation over the roof deck.

Excellent bond—no excess take-up of bitumen. Compactness of surface means insulation value is not materially affected by moppings on the job.

Firm, squared edges—snug joints. Provide flush contact at board joints for top insulation efficiency, protection from punctures.

Resists damage from rough handling. Tough cane fiber board clear through . . . no weak spots to tear or break in shipping and application.

Strong, rigid, crush-resistant. Withstands wheeling and job traffic; resistant to punctures or depressions forming weak spots.

Moisture-resistant. Special chemical treatment renders board moisture-resistant throughout. Preseal and Channel-Seal are asphalt coated.

Termite and dry rot resistant. Protected against dry rot and termite attack by exclusive Ferox® Process.

OVER A THIRD OF A CENTURY OF LEADERSHIP IN EFFICIENCY, DURABILITY, ECONOMY!

In the past 35 years, The Celotex Corporation has manufactured and sold many millions of square feet of roof insulation. The advantages of specifying Celotex Roof Insulation become more and more obvious as the years go by . . . for this dependable insulation has proved able to stand up to time, wear, and weather, decade after decade. *Be sure* always to specify *job-proved* Celotex Roof Insulation.

It pays to specify genuine

CELOTEX
REG. U.S. PAT. OFF.
ROOF INSULATION

THE CELOTEX CORPORATION, 120 SOUTH LA SALLE STREET, CHICAGO 3, ILLINOIS

Schoolrooms Are In For Brighter Days

With *Vina-Lux*® FLOORS

Vina-Lux vinyl-asbestos tile makes a perfect flooring background for school areas. Soft, light-reflecting colors, attractive but not distracting, suggest new and interesting design techniques that will make your school interiors more effective.

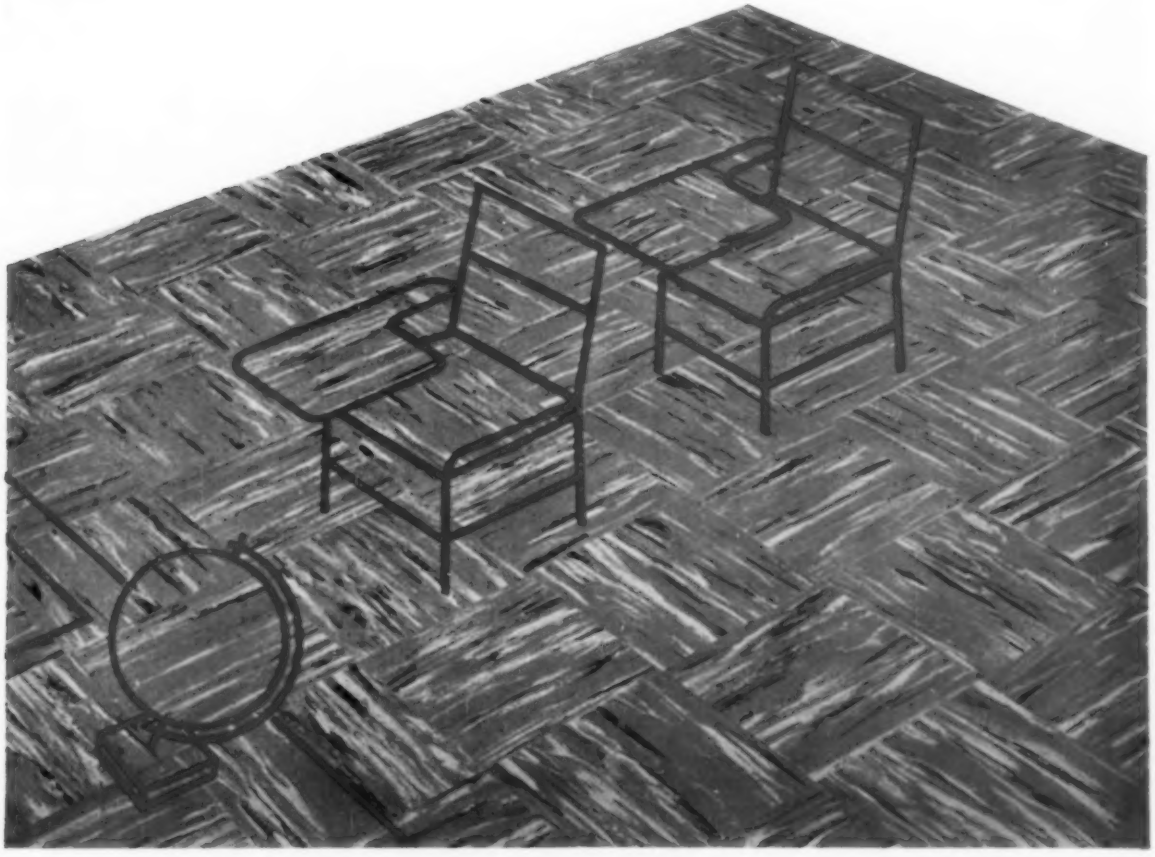
And Vina-Lux makes light of maintenance, too — doesn't take muddy tracks, grease or chalk dust seriously, and its smooth, tightly-textured surface keeps that fresher, cleaner look for years without the need of wax. When your problem is school flooring, you'll discover new designing freedom in Vina-Lux. Write for information, samples and color chart.

Pattern shown: Kodiak

AZROCK FLOORING PRODUCTS

AZROCK PRODUCTS DIVISION • UVALDE ROCK ASPHALT CO.

573 Frost Bank Building • San Antonio, Texas • *Makers of* Vina-Lux • Azrock • Duraco • Azphlex



Sunray Building, Tulsa, Oklahoma. Architect: Hugh R. Humphreys; Consulting Engineers: Carnahan and Thompson; General Contractor: Manhattan Construction Co.; Equipment Contractor: Carl Moore Co.

D. C. Kennedy (left), special-service director of Sunray Mid-Continent Oil Co., and H. E. Kenslow, vice president of Anderson-Rooney Operating Co., which owns and operates Sunray Building.

In Tulsa, weather news is made indoors!

The modern Sunray Building presents over 28,000 square feet of glass area to Tulsa, Oklahoma's blazing 100° summer heat and its frigid, below-zero winter climate.

To combat these unusual temperature changes, Anderson-Rooney selected American Blower air conditioning equipment. Result: ideal indoor comfort the year round, regardless of weather outdoors.

"Our American Blower equipment has been running continuously," says Building Engineer W. B. Reed, Jr. "Not once has it failed us in any manner. In fact, it has practically taken care of itself. We have exercised no maintenance, no repairs. About the only thing that we've done is to wipe the units down occasionally to keep them clean."

If *your* plans include air conditioning, it will pay you to talk to an American Blower sales engineer. He's backed by a full line of equipment for any size or type of installation. Call our nearest branch, or write us direct.

In addition to equipment for complete central systems, American Blower offers packaged air conditioners for offices, stores, small industrial plants, similar applications.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN • CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

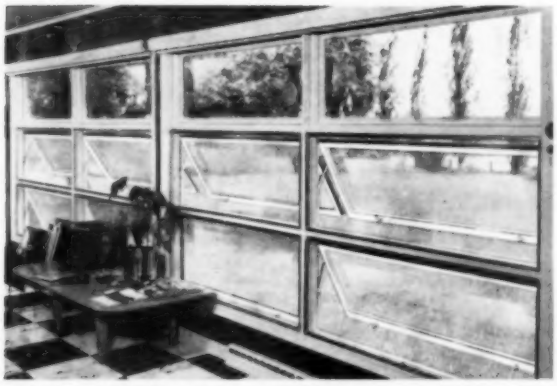
Division of American-Standard

AMERICAN BLOWER

Air conditioning equipment for every business

Add value to homes with windows from

CURTIS



ADD A WHOLE EXTRA ROOM by enclosing a porch with Curtis Silentite Convertible wood windows. These versatile windows—used here as awning style sash—provide any desired degree of summer ventilation—yet have special weather-stripping to keep out the cold weather. In upright position, Convertibles can also be used as casements. New-style Zytel nylon hardware is furnished.

PROVIDE POPULAR CASEMENT CHARM with these modern, single-pane Curtis Silentite casements. Silentite casements give home-owners all of the beauty and comfort but none of the grief often encountered with ordinary casements. They won't swing or rattle...lock in any position... and they are superbly weather-tight. They come equipped with screens and insulating glass—and all hardware.

WIDEN THE OUTLOOK FOR OWNERS by using Silentite double-hung windows with a Silentite picture sash. No other double-hung window has all the weather-tight features of these Curtis units. They open and close at a touch—and their streamlined appearance gives them special charm and beauty. Easily installed in any kind of wall. Several styles available for your choice.

INCREASE THE SIZE OF SMALL ROOMS by creating a bay with Curtis Silentite double-hung windows. Here's an arrangement that adds more space—and more charm—to any home. These windows come as ready-to-install units, and go into the house with a minimum of time and effort. Like all Curtis Silentite windows, they are guaranteed as to materials and workmanship.

Silentite windows are sold by leading lumber dealers in most parts of the country. Send for Curtis survey showing how you can sell more quality homes—and new window idea book!

CURTIS

WOODWORK

heart of the home

1856 CURTIS WOODWORK SILENTITE the insulated window

Curtis Companies Service Bureau
200 Curtis Building
Clinton, Iowa PA-6-56

Please send me the new Curtis window idea book.

Name .....

Address .....

City ..... *State* .....

WEIS

vitre-steel toilet compartments

... porcelain fired on steel at 1550° for a lifetime of beauty and utility

WE SEAL THE STEEL . . . seal it completely with porcelain enamel, inside and outside the double-wall partitions and doors. Outside surfaces are then re-fired in your choice of smart WEIS VITRE-STEEL colors.

Glass-hard VITRE-STEEL finishes withstand not only normal everyday usage, but the attacks of acids, cleaning compounds and even deliberate defacement by "restroom Rembrandts." Modern conveyorized continuous firing furnaces have eliminated the previous need for 16-gauge metal (used to minimize warpage when firing is done on burning pins or A-frames in box-type furnaces). Weis now uses 18-gauge metal to produce lighter, yet completely straight and stable VITRE-STEEL partitions and door panels.

In hospitals, schools, office buildings, factories . . . wherever you install them . . . WEIS VITRE-STEEL compartments are there to stay for the life of the building. Years of experience in producing vitreous porcelain enamel products guarantee that these compartments are the finest that modern machinery, quality materials and skilled craftsmen can produce.

WEIS VITRE-STEEL compartments are available in conventional *Floor-Braced* and *Hi-Stile* types as well as in the popular *Ceiling-Hung* type that leaves the floor completely free of obstructions for easier cleaning.

Write for further information.

Actual photograph of Weis Ceiling-Hung VITRE-STEEL toilet compartment installation.

WEIS
VITRE-STEEL
PORCELAIN ENAMEL

HENRY WEIS MANUFACTURING COMPANY, INC.
METAL COMPARTMENT DIVISION
ELKHART, INDIANA

Actual photograph of Weis Floor-Braced VITRE-STEEL toilet compartment installation.

SPECIFICATIONS

All metal compartments for toilets and dressing rooms shall be WEIS VITRE-STEEL (vitreous porcelain enamel on steel in accordance with Porcelain Institute standards for architectural porcelain enamel), as manufactured by Henry Weis Manufacturing Company, Elkhart, Indiana. Panels, stiles and doors shall be flush construction.

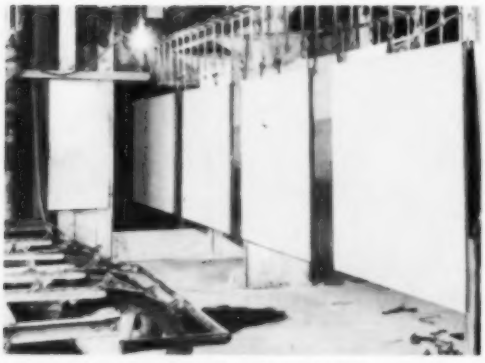
Partitions, stiles and doors shall be made of 18-gauge porcelain enameling iron. Strips for edge bindings shall be stainless steel. Cores shall be laminated corrugated fiber board approximately 1" thick for partitions and doors and $1\frac{1}{4}$" thick for stiles.

Partitions, doors and stiles shall be made of two face plates with formed edges, cemented under pressure to the core and joined by welding the abutting edges at suitable intervals. The edges shall be bound with die-drawn moldings interlocked under tension onto formed edges, mitered and welded at the corners and welds ground smooth. Partitions and doors shall finish 1" thick; stiles shall finish $1\frac{1}{4}$" thick.

All surfaces, concealed and exposed, shall receive a vitreous porcelain enamel ground coat. All exposed surfaces shall then be given a cover coat, in a color selected from the Weis color chart of 24 decorator colors.

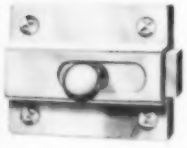
Doors shall be hung on WEIS gravity hinges and the upper hinge shall be mounted in a recess in the edge of the door. Doors shall be fitted with slide bar latch, combination keeper and bumper and coat hook with rubber-tipped bumper, all to be brass, chromium plated. Latches and coat hooks shall be attached with theft-resistant screws.

(Specify: Ceiling-Hung, Floor-Braced or Hi-Stile types.)

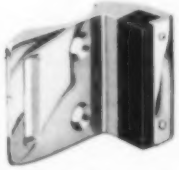


Modern conveyorized continuous firing furnace . . . used to produce Weis VITRE-STEEL toilet compartments

Actual photograph of Weis Hi-Stile VITRE-STEEL toilet compartment installation.

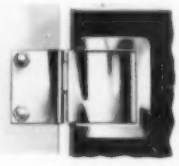


SLIDE BAR LATCH

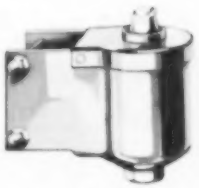


COMBINATION KEEPER AND BUMPER

COMBINATION COAT HOOK AND BUMPER



CUT-OUT TYPE TOP DOOR HINGE



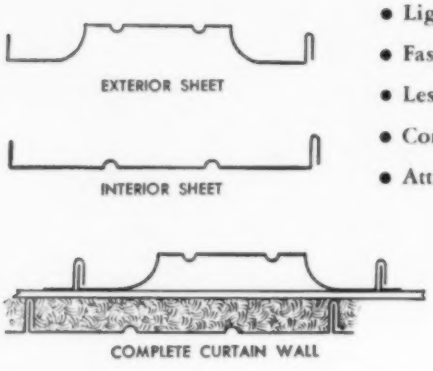
UNIVERSAL BALL-BEARING GRAVITY TYPE BOTTOM DOOR HINGE AND CUT-AWAY VIEW

For rapid construction plus eye appeal . . .

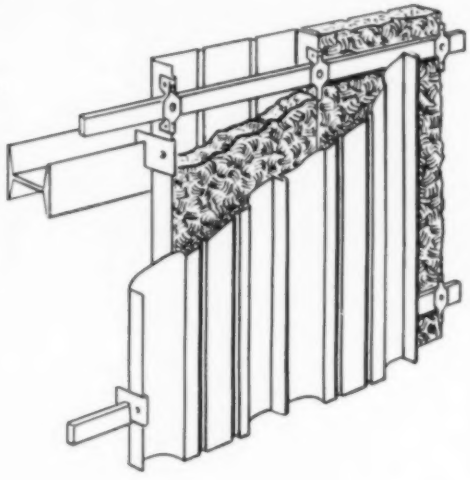
specify NEW STRAN-STEEL CURTAIN WALL

Now your buildings can have structural soundness as well as a fresh, attractive appearance with Stran-Steel curtain walls. Exclusive *Stran-Satin* finish gives you a satin-smooth, highly decorative surface and the added protection of a non-corrosive zinc coating. And, of course, the eye appeal of these *Stran-Satin* panels is combined with the low cost and extra strength that only steel can offer. For wall or fascia construction in all types of public buildings, specify Stran-Steel curtain wall.

Stran-Steel curtain wall panels offer these advantages . . .



- Light framework
- Fast, easy to assemble
- Less heat loss
- Complete wall insulation
- Attractive appearance



56-SS-148

Stran-Steel Corporation
Ecorse, Detroit 29, Michigan

☐ Please send me the new Stran-Steel Structural Systems catalog

☐ Please have your representative contact me

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Company_____

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Ecorse, Detroit 29, Michigan • A Unit of
NATIONAL STEEL CORPORATION

Here's where to obtain Engineering Service:
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Bring all of this

inside for the sake of those in here

Children live so much of their lives in classrooms. That's why Daylight Walls are vitally important.

44 out of 45 teachers surveyed in a recent research study were highly pleased with classrooms having daylight walls. These comments are typical:

"The lighter, brighter surroundings create a good environment for learning."

"Students do not get tired and restless, because there is no feeling of *confinement*."

And most of the teachers were quick to admit that they, too, were a lot happier in classrooms with daylight walls.

Send for your free copy of this complete research report by Paul R. Hensarling, Director of Administrative Research and School Community Relations for Port Arthur, Texas.

For your free book on school daylighting write to Dept. 4566, Libbey·Owens·Ford, 608 Madison Ave., Toledo 3, Ohio. And for cost estimates, etc., call your Libbey·Owens·Ford Glass Distributor or Dealer (listed under "Glass" in phone book yellow pages).

LOF GLASS

DAYLIGHT WALLS

LIBBEY·OWENS·FORD . . . *a Great Name in Glass*

Things to consider in "PANORAMIC" design

TRANSPARENT INSULATION is built into this great window wall with insulating glass. *Thermopane* saves heat in winter and lowers the load on air-conditioning during summer. Architects: Palmquist & Wright, Detroit. Designer: Richard B. Pollman, Detroit.

Seems like "panoramic" living is almost everywhere you look nowadays, and it's bound to become even more important in architecture. Large areas of glass help people in enclosures feel less enclosed. And that's becoming more and more important to *them*.

When you design along such lines, you need to pay particular attention to these comforts: Winter warmth with lowest heat loss; cool comfort in summer with the lowest possible load on air-conditioning; rooms kept quieter because outside noise is muffled.

So we suggest *Thermopane*® insulating glass in your window walls, picture windows, sliding glass doors and even your small windows. Why leave *any* holes in the insulation?

We think you'll agree that the comforts and continuous savings far outweigh the original cost of *Thermopane*. There's more about it in the column at the right.

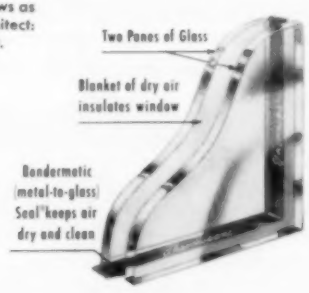
LOF GLASS

Thermopane
INSULATING GLASS

LIBBEY · OWENS · FORD . . . *a Great Name in Glass*

PANORAMIC LIVING IS MORE THAN VISUAL HERE. You can walk out as easily as you can see out. For the greatest comfort, this glass wall of sliding doors is glazed with *Thermopane* insulating glass. Architects: Bellman Gillette & Richards, Toledo, Ohio.

NO HOLES IN THIS INSULATED WALL. For heat saving and greatest comfort, it's as logical to insulate all your windows as it is to insulate all your walls. Architect: Harold Spitznagel, Sioux Falls, S. D.



Thermopane FACTS

Much technical information is available to help the architect and engineer design for the most effective and most economical use of *Thermopane* insulating glass. It is all in our *Thermopane* Manual which will be sent on request. (See coupon below.)

The following brief data are excerpts from the manual:

ADVANTAGES OF THERMOPANE

1. Savings in fuel
2. Increased usable room space
3. Reduction of condensation
4. Reduced air-conditioning initial equipment needs and operating costs
5. Quieter interiors

INSULATING EFFICIENCY

Thermopane with ¼″ air space—U = .65
Thermopane with ½″ air space—U = .58
Single ¼″ glazing—U = 1.15

KINDS OF GLASS

Thermopane is made with plate glass for maximum clarity, or with sheet glass when economy is main consideration. Units ½″ thick have ¼″ air space, units 1″ thick have ½″ air space. *Thermopane* can also be made with Heat Absorbing Glass, *Tuf-flex*® tempered plate glass, or several types of Blue Ridge *Patterned Glass*.

STANDARD SIZES

More than 90 standard sizes are made to permit economy in use with most popular types of sash. The *Thermopane* Manual provides a list of sash types and standard sizes for them.

OTHER DATA IN THERMOPANE MANUAL

Heat Loss Data
Warm Side Surface Temperatures
Condensation Points
Sound Insulation
Light and Solar Radiation Transmittance
Reduction of Cooling Load
Strength of *Thermopane*
Wind Load
Weight Per Sq. Ft.
Glazing Instructions
Framing Details
Suggested Specifications

Thermopane is sold by local L·O·F Glass Distributors and Dealers (listed under "Glass" in the yellow pages).

®

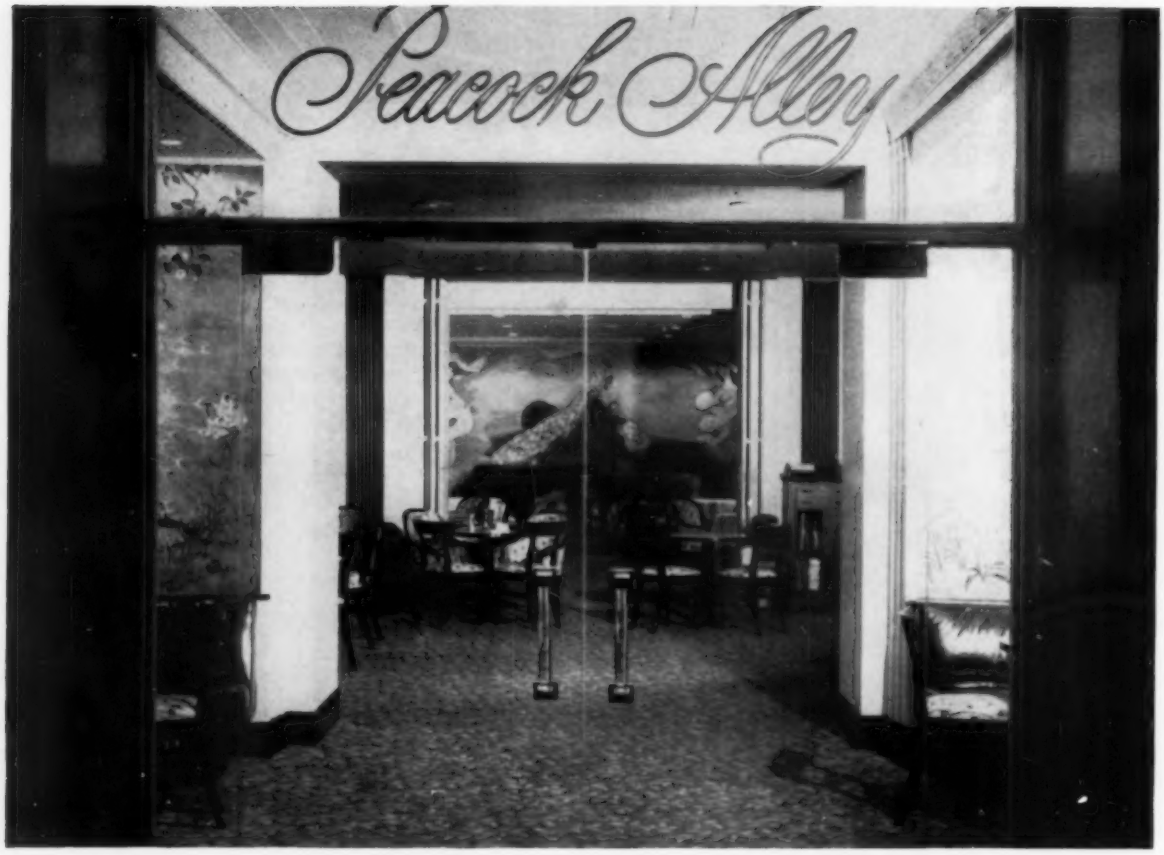
Libbey-Owens-Ford Glass Co., Dept. 166
608 Madison Ave., Toledo 3, Ohio

Please send me a copy of the *Thermopane* Manual.

Name _____
(Please Print)

Street _____

City _____ State _____



Waldorf-Astoria floor maintenance figures show carpet cuts cost 78.5%

Cost figures prove that carpet can save your clients as much as 78.5% on maintenance costs.

Figures for all types of traffic areas, from light to very heavy, in the Waldorf-Astoria, a Hilton Hotel, show that it costs $189 per year to maintain 1000 square feet of carpeted floor space.

To maintain an equivalent area of non-carpeted floor space, this figure jumps to $880 a year. Carpet averages a savings of $691 a year per 1000 square feet.

This vast difference in costs exists because carpet is so much easier to clean. Soil stays loose in the pile – routine vacuuming can easily remove it. Less labor and equipment are needed. Just one operation – no scrubbing, no waxing, no buffing. Dirt doesn't grind in and there's no gloss to wear off.

Carpet looks better longer, too. It's amazing durability is due to the resiliency that makes it yield with pressure, spring back when pressure is released. Carpet looks soft – wears hard. In addition, carpet reduces noise and provides slip-proof footing. It is your best choice for a more relaxed, more efficient, more beautiful floor covering specification.

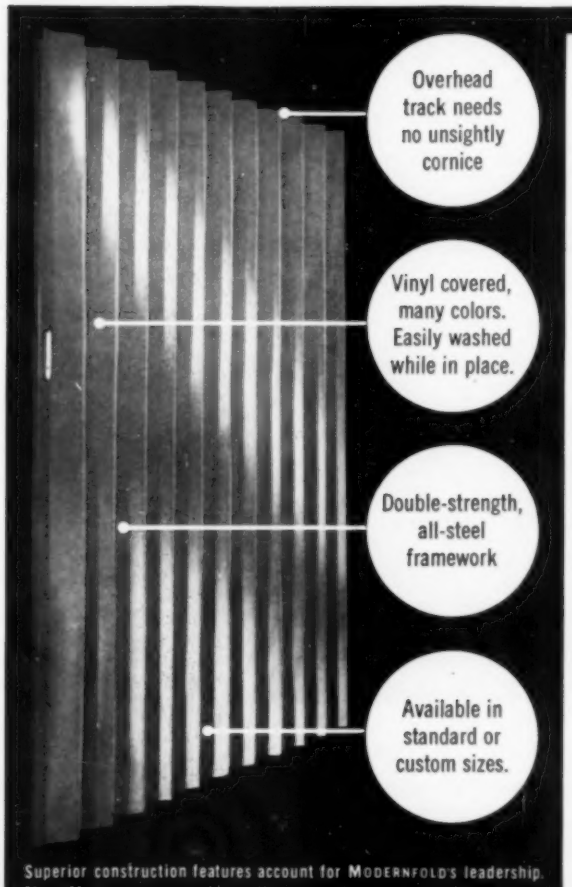
Cut your clients' floor maintenance costs with carpet. Send for your file copy of "Cutting Costs With Carpet." Write Dept. A2, Carpet Institute, Inc., 350 Fifth Avenue, New York 1, N. Y.

Specify carpet designed and made for the American way of life by these American manufacturers

Artloom • Beattie • Bigelow • Cabin Crafts-Needletuft • Downs • Firth • Gulistan • Hardwick & Magee • Hightstown • Holmes Karastan • Lees • Magee • Masland • Mohawk • Nye-Wait • Philadelphia Carpet • Roxbury • Sanford • Alexander Smith

CARPET INSTITUTE, INC., 350 Fifth Avenue, New York 1, N.Y.

are folding doors faddish...or functional?


Overhead track needs no unsightly cornice
Vinyl covered, many colors. Easily washed while in place.
Double-strength, all-steel framework
Available in standard or custom sizes.

Superior construction features account for MODERNFOLD'S leadership. More MODERNFOLDS are in use than any other make of folding door!

what's behind the growing popularity of MODERNFOLD DOORS?

Ask any of your friends in the profession why *he* has used MODERNFOLD Doors. Was it to save space? Was it as a room divider? Or did he devise some completely *new* application for this door?

In recent years, architects have seen how MODERNFOLD allows them greater freedom of design by eliminating door-swing. They have witnessed the long service life of this door. And they are employing them in commercial, residential and institutional designs.

How can MODERNFOLD Doors best serve *you*? When your MODERNFOLD distributor shows you their many quality features, your imagination will be stimulated to find new applications for them.

modernfold doors have no equal

MODERNFOLD distributors are listed under "Doors" in city classified telephone directories

modernfold® DOORS

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NEW CASTLE PRODUCTS, INC., New Castle, Indiana • *In Canada:* New Castle Products, Ltd., Montreal 6 • *In Germany:* New Castle Products, GMBH, Stuttgart

New Castle Products, Inc., Dept. F31, New Castle, Indiana

Please send me full information on MODERNFOLD Doors.

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...the *that* **saves**

"Best construction we've ever used," reports Ken Larsen, president, Continental Construction Co.

COST STUDIES *conducted by Continental Construction Co., Seattle, show new "panel and girder" system (2·4·1 panels over supports 48" o.c.) cuts costs 7 ways over conventional "shiplap and joist" construction.*

Girders set flush with footings lower house about 12". Result: important savings in materials and labor plus attractive "low-lying" feeling.

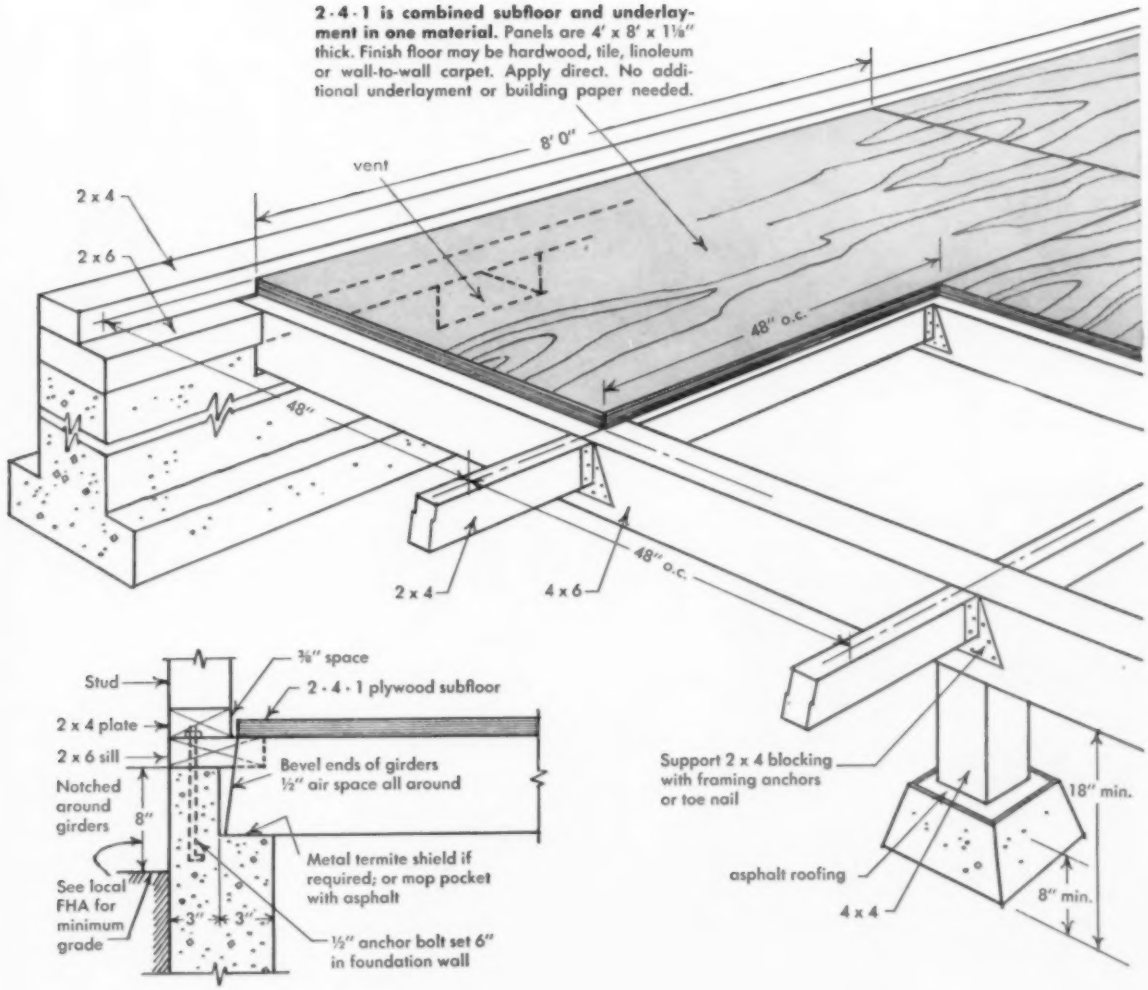
1.	Savings in material and labor costs in subfloor and framing	$ 78.00
2.	Eliminate underlayment in kitchen, bathroom. Labor and material	30.00
3.	Eliminate need for underlayment beneath 5/16" strip flooring. (Note: system permits premium strip flooring to be used at price competitive with ordinary 25/32" flooring). Labor and material @ 20c per square foot	170.00
4.	Savings afforded by ease of access to work by heating and plumbing subcontractors. (Panels can be taken up as needed during job)	60.00
5.	Savings in framing, sheathing, siding due to 12" less exterior wall height. Labor and material	40.00
6.	Elimination of concrete steps and landings in three places due to lower floor. Labor and material	90.00
7.	Savings on painting contract, staging, etc., due to 12" less exterior wall height. Elimination of framing around heat openings in floor. Labor and material	32.00
	***TOTAL SAVINGS REPORTED BY CONTINENTAL CONSTRUCTION CO.**	**$500.00**

Other builders report varying savings depending upon local labor and material costs, type of finish flooring, and type of construction formerly used (i.e., slab, plank and beam construction).

revolutionary new plywood subfloor-underlay

up to $500.00 per house*

2·4·1 is combined subfloor and underlayment in one material. Panels are 4' x 8' x 1⅛" thick. Finish floor may be hardwood, tile, linoleum or wall-to-wall carpet. Apply direct. No additional underlayment or building paper needed.



Stud
⅜" space
2 · 4 · 1 plywood subfloor
2 x 4 plate
2 x 6 sill
Bevel ends of girders
½" air space all around
Notched around girders
8"
Metal termite shield if required; or mop pocket with asphalt
See local FHA for minimum grade
3"
3"
½" anchor bolt set 6" in foundation wall

FOR MORE INFORMATION, write Douglas Fir Plywood Association, Tacoma 2, Washington

La Cienega Homes IN SAN FERNANDO VALLEY

are all AllianceWare equipped

Typical La Cienega Home
Designed and built by BRS Development Co. • *Plumbing Contractor*—The Gluck Co. • *AllianceWare furnished by* Tri-State Pipe and Supply Co.

Bathtubs

Lavatories

Closets

Sinks

AllianceWare
PORCELAIN ON STEEL

Gil Brown of BRS Development Company has installed AllianceWare in many developments, so it was natural that AllianceWare should be specified for the company's newest community—La Cienega Homes.

Situated on part of the famous La Cienega Ranch—the oldest ranch in San Fernando Valley—the La Cienega project comprises 700 three- and four-bedroom, two-bath houses in the $13,000 to $16,650 class.

AllianceWare fixtures—tubs, water closets, lavatories and sink and tray combinations—are used throughout.

Builders who know and use AllianceWare, select this famous sanitary ware again and again, because they have learned there is only one quality to AllianceWare—the finest we know how to produce.

AllianceWare—porcelain-on-steel—is designed to meet modern building needs. Lighter in weight for easier handling and installation. Porcelain-on-steel to assure lustrous, stain-proof beauty. Formed steel to provide exactness in dimensions and to avoid useless dead weight. Furnished in 5 colors—as well as white—to meet modern interior decorative schemes.

If you do not have the complete AllianceWare catalog, we'll gladly mail a copy.

ALLIANCEWARE, INC. • Alliance, Ohio
Plants in Alliance, Ohio; Colton, California; Kilgore, Texas
Bathtubs • Lavatories • Closets • Sinks

Photo by Hedrich-Blessing. Furniture by M. Singer & Sons.

America's newest, smartest hardwood floor

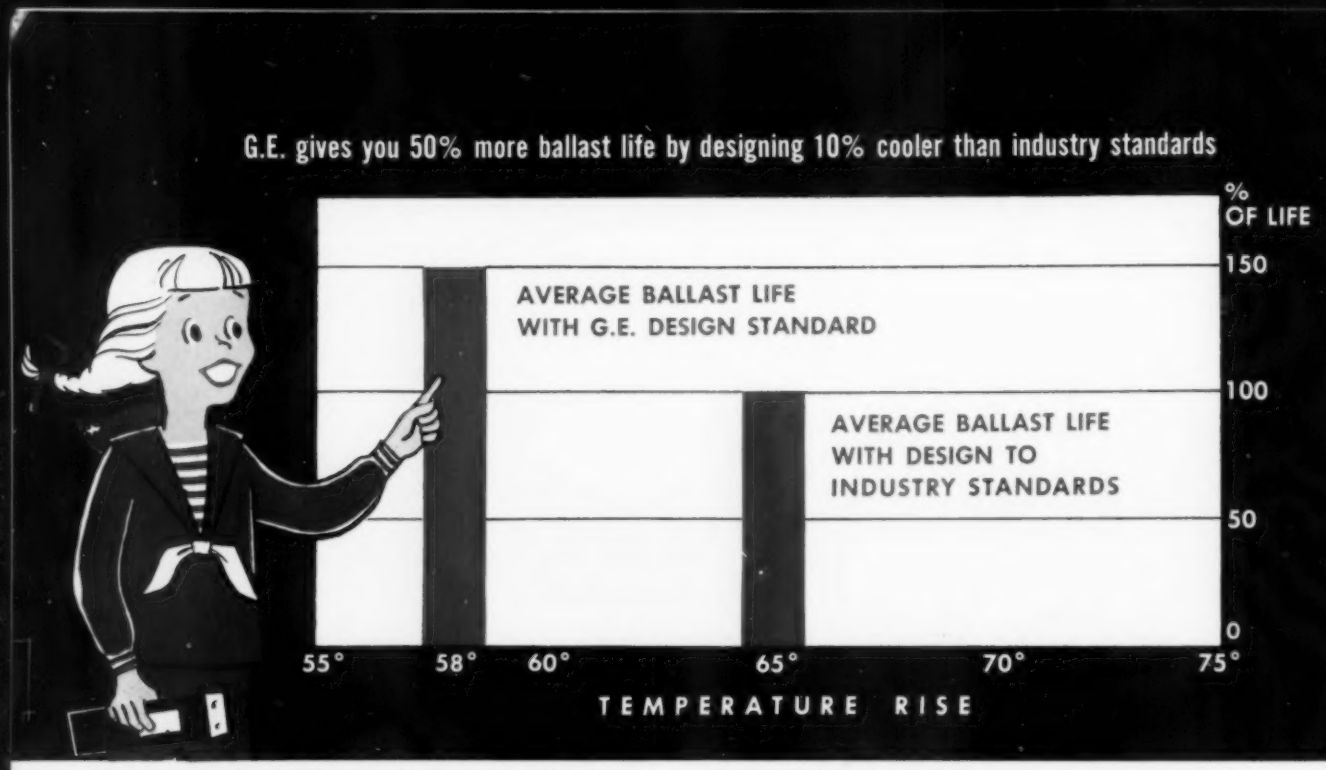
Its striking new Midnight Finish has won the enthusiastic approval of architects, decorators and home buyers for Bruce Fireside Plank. Alternating 2¼" and 3¼" strips of solid oak create the charm of expensive random-width plank . . . with wide, shallow side-bevels to emphasize the interesting, casual effect.

While high in style, Bruce Fireside Plank is low in price . . . in fact, costs little more than a regular strip floor. It's completely finished at the factory for beauty, durability and on-the-job cost savings. Write for color booklet. See our catalog in Sweet's Files.

E. L. BRUCE CO., MEMPHIS 1, TENN.

BRUCE *Naturally Beautiful*

Bruce Fireside Plank Floor



BECAUSE G-E BALLASTS ARE engineered to operate 10% cooler than industry standards, they offer 50% longer life in your fluorescent installation. With this chart, Flora shows you the extra ballast life you get when you specify General Electric's cooler operating ballasts.

Flora* shows you why . . .

General Electric Ballasts Last 50% Longer, Help You Save Lighting Dollars

Every G-E ballast is designed to operate 10% cooler than industry standards; the chart above shows that this means 50% longer ballast life! To you, this means longer life for your fluorescent installations and a real saving in lighting dollars.

By carefully filling each ballast with a special heat-conducting compound, and by using larger wire size in the coil windings than would be required simply to meet industry standards, G.E. builds ballasts that operate cooler! Cooler operating temperatures combined with the use of unusually strong insulating materials results in years of added ballast life.

These special G-E techniques contribute toward lower operating temperatures, resulting in 50% longer ballast life.

Next time you specify equipment for a fluorescent lighting installation, make sure you get the best . . . specify General Electric longer-life ballasts.

A G-E ballast tag or sticker on your fixture is proof that it's equipped with a superior ballast; G-E ballasts in your installation mean better, more efficient lighting, more economical operation. For further information on G-E ballasts, write Section 401-10, General Electric Company, Schenectady 5, New York.

*Miss Fluorescent Ballast, G.E.'s Ballast Mascot

Copyright 1955, General Electric Company

G-E BALLASTS ARE constantly spot-checked for normal or abnormal temperature rise in this special lab. Close control of temperature rise helps assure 50% longer G-E ballast life.

Five more reasons why

GENERAL ELECTRIC IS YOUR BEST BALLAST VALUE

- **EXCLUSIVE SOUND RATING SYSTEM**
- **SUPERIOR QUALITY CONTROL**
- **PRECISE LAMP-MATCHED DESIGN**
- **PROVED PRODUCT LEADERSHIP**
- **COMPLETE CUSTOMER SERVICES**

Progress Is Our Most Important Product

GENERAL ELECTRIC

New cost-cutting construction

introduced by Styrofoam insulation method

Now Dow plastic foam insulation eliminates furring, lathing . . . assures warm, waterproof masonry walls . . . with construction method proved in low-temperature structures.

Authorities have been astonished recently to see how damp-free masonry homes can be erected in less time—without furring or lathing—by using the low-temperature method with Styrofoam® (a Dow plastic foam).

This rigid, water-resistant insulation bonds to masonry walls with portland cement mortar. Plaster keys directly to its surface. Time-consuming jobs are eliminated, and the result is a dry, well-insulated structure.

These are a few of the many reasons why experts agree that Styrofoam brings a new concept to home construction. Yet no special tools or training are required.

Proved best by industry—

Styrofoam has been manufactured in commercial quantities since 1943. In that time it has been used with exceptional success in industrial installations across the country. The list of foremost organizations that have used Styrofoam reads like "Who's Who"! Now increased production makes the unique advantages available to the builder field. Its low thermal conductivity, its high resistance to water and water vapor, combined with its exceptional strength and light weight, add up to make a superior insulation for all building needs.

Everyone benefits—

With Styrofoam the home owner enjoys the finest insulation—plus smooth, long-lasting plaster walls. The builder profits from the elimination of furring or lathing—plus exceptional ease of handling. And the architect is able to specify walls he knows will remain dry.

Brochure of architectural details is available at no cost from Plastics Sales Dept. PL 527W, THE DOW CHEMICAL COMPANY, Midland, Michigan.

Builder shows 4 steps to

1 **MASONRY** wall is erected according to usual practice . . .

2 **MORTAR** of portland cement is applied to Styrofoam . . .

What do the unique advantages of Styrofoam mean to architects?

One of the first concerns of every architect is to erect better structures—at lower cost. And Styrofoam now makes an outstanding contribution to help accomplish these twin goals. For instance—

Styrofoam is so strong, so rigid that concrete floors are poured over it without additional support (so larger sections can be applied at one time!).

It is the lightest of all rigid insulations, weighing only 2.4 ounces per board foot (for easier handling on the job).

It is not affected by water or water vapor because of its noninterconnecting cellular structure. Even after a weeks immersion, only the open surface cells show any evidence of moisture (for dry living quarters).

The low thermal conductivity cannot be matched by any other insulation with comparable properties. The average "K" factor is 0.25 BTU-in./sq. foot-hr. —°F. (for comfortable housing, winter and summer).

Exhaustive tests indicate Styrofoam lasts a lifetime (for higher-value structures and completely satisfied clients).

It is nondusting, nonflaking, and can be cut easily with common tools (for low investment).

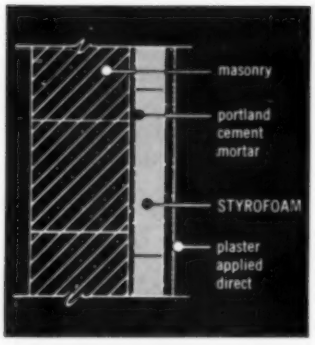
It is clean, odorless and nonirritating to the skin (for contented workers).

Advantages like these can be turned to the builder's profit—write for **free brochure of architectural details** and specify number needed. Address: Plastics Sales Dept. PL 527W, THE DOW CHEMICAL COMPANY, Midland, Michigan.

eliminate furring, lathing

3 **STYROFOAM** adheres readily to masonry without furring!

4 **PLASTER** keys directly to Styrofoam without lathing!



Styrofoam is readily adhered to masonry surfaces by portland cement mortar, cold-setting asphalts or roller-coat-applied hot melt.

comparative (u) values

wall type	wall thickness	(u) values A	B	C
Brick	8"	.50	.30	.158
4" face	12"	.36	.24	.139
Rest common	16"	.28	.20	.123
Concrete	6"	.79	.39	.180
	8"	.70	.36	.175
	10"	.63	.34	.170
	12"	.57	.33	.166
Concrete	8"	.56	.32	.164
Block	12"	.49	.30	.158
Cinder	8"	.41	.27	.146
Block	12"	.38	.25	.142

Where:
*A = plain wall
*B = furred, lathed and plastered wall
*C = 1" thick Styrofoam with plaster direct—no furring or lathing

engineering data

thermal properties		
Thermal Conductivity (K factor) B.T.U. /ft. /hr. /in./°F.		0.23—0.27 at mean temperature of 40°F.
Linear Thermal Coefficient of Expansion		.00003 to .00004 in./in./°F. between.....0°F. and 80°F.
Specific Heat		0.27 B.T.U./lb./°F. at 40°F.
Resistance to heat (maximum recommended temperature for continuous use)		Styrofoam 22—175°F. Styrofoam 33—155°F.
physical properties		
		Styrofoam 22 / **Styrofoam 33**
Density	(lb./cu.ft.)	1.6—2.0 / 1.7—2.3
Compressive yield strength	(p.s.i.)	16—32 / 16—38
Tensile strength	(p.s.i.)	45—61 / 65—95
Shear strength	(p.s.i.)	27—36 / 30—40
Flexural strength	(p.s.i.)	42—61 / 48—99
Compressive modulus	(p.s.i.)	1200—1700 / 1500—2000
Bending modulus	(p.s.i.)	1000—1285 / 1250—1760
Modulus or rigidity (shear modulus)	(p.s.i.)	700—1600 / 1000—1300
water resistance properties		
Capillarity		None
Water absorption When subjected to 90°F., 90% relative humidity for 15 days		Less than 0.03% by volume
Water adsorption When completely submerged for one week		Water pick-up only on surface cells less than 0.15 lb./sq. ft. of area.
vapor transmission		
When Styrofoam acts as a barrier between spaces having different atmospheric conditions.		1.0—2.0 grains/sq.ft./hr./in. of thickness/in. of Hg. vapor pressure difference.

Copyrighted by The Dow Chemical Company 1955.

you can depend on DOW PLASTICS

DOW

Check these other applications where

Styrofoam is superior

CAVITY WALLS may be constructed with air space on either side of Styrofoam.

WALL PANELS with Styrofoam cores are available from several manufacturers.

FOUNDATION AND SLABS—Unusually satisfactory with wet-proof Styrofoam.

ROOFS—Exceptional strength is combined with light weight to reduce dead load.

LOW-TEMPERATURE CONSTRUCTION—Unique combination of properties.

INDUSTRIAL EQUIPMENT—Tanks, pipes and heat exchangers perform better.

Free Brochure of Architectural Details

A brochure of architectural details for various applications of Styrofoam is available to you without charge. Address: Plastics Sales Department PL527W, THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW PLASTICS

DOW

ENGINEERING "KNOW HOW"

BORN OF EXPERIENCE

IS MIGHTY IMPORTANT IN DESIGNING CURTAIN WALLS

Another CURTAIN WALL by GENERAL BRONZE

Commercial Credit Building
Baltimore, Md.
Architects: Harrison & Abramovitz
Contractor: Consolidated Engineering Co.

Designing and producing curtain wall panels may look like a simple, easy job that anybody could do. Actually, it's a highly specialized type of construction that is full of pitfalls and problems for the inexperienced and unwary.

From more than 10 years' practical experience with 24 individual curtain wall jobs (including the United Nations Buildings, the ALCOA Building, Lever House, the Texaco Building, New Orleans, the Connecticut General Life Insurance Bldg., Bloomfield, Conn., and others), we at General Bronze have learned the answers to the many intricate problems that are a part of this highly specialized business. For instance, we have learned how to take care of expansion and contraction while keeping the building weathertight at all times, when and where flashings are necessary, how to integrate the window into the wall panel, how to design for trouble-free horizontal and vertical joints, etc.

If you are thinking of curtain walls in terms of aluminum, bronze or stainless steel skins, grids with aluminum windows and insulating panels of either colored alumilite or porcelain enamel, or stainless steel grids with glass panels, we offer you the benefits of our many years' experience in designing, engineering, fabricating and erection of curtain walls. Call in the General Bronze representative today. He is anxious to serve you. Our catalogs are filed in Sweet's, Section 17a/Ge.

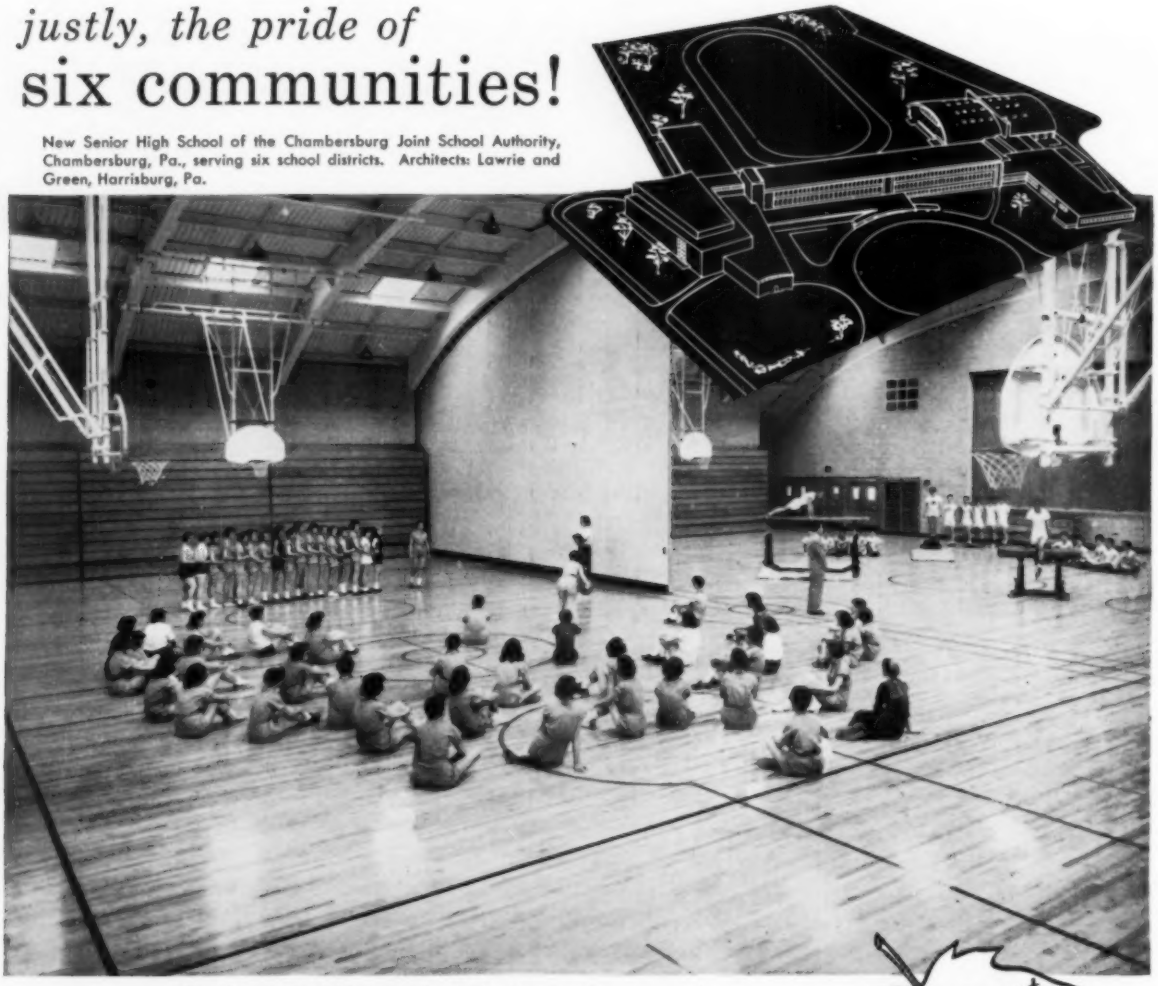
GENERAL BRONZE CORPORATION • GARDEN CITY, N. Y.

PERMATITE DIVISION—Custom-built Windows, Architectural Metal Work and Revolving Doors. ALWINTITE DIVISION—Stock-size Aluminum Windows
BRACH MFG. CO. DIVISION—Muttel, T. V., Radio and Electronic Equipment. STEEL WELDMENTS, INC. DIVISION—Custom fabrication in steel and iron.

justly, the pride of

six communities!

New Senior High School of the Chambersburg Joint School Authority, Chambersburg, Pa., serving six school districts. Architects: Lawrie and Green, Harrisburg, Pa.



One of many splendid features—this ideal multi-purpose gymnasium, end-result of the meeting-of-minds of 36 forward-looking school directors.

the finest floor that grows

Floored, for a long future, with

NORTHERN HARD MAPLE

The endurance, resilience and brightness that have made Northern Hard Maple flooring virtually the universal choice for gymnasium and multi-purpose rooms, make it ideal for other hard-usage school areas. It fights abrasion and impact, doesn't splinter. Cleaning and maintenance are easy. Refinishing, when finally needed, is simple (there's always a "new floor" underneath). Specify Northern Hard Maple with the confidence it has earned. It is available in regular strip or in block and pattern designs, in standard, warranted **MFMA** grades, offering almost endless variety. The **MFMA** mill-mark is your warranty of strict grading, genuineness of species and precision manufacture.

SEE SWEET'S
—Arch. 13J-Ma, for full technical data.

WRITE

—for 1956 official MFMA listing of approved floor finishing products.

MAPLE FLOORING MANUFACTURERS ASSOCIATION

SUITE 583, PURE OIL BUILDING, 35 EAST WACKER DRIVE • CHICAGO 1, ILLINOIS

Eliptisquare Lighting
with Amcolens
makes interiors look brighter
Handsome Art Metal Eliptisquares belong in luxurious settings. Here is recessed lighting that actually puts new light on a subject—and so dramatically as to multiply the sales and adventure appeal of this airlines office. Heart of the Eliptisquare is the Amcolens made of clear glass prisms. Why don't you discover the exciting design possibilities of the Eliptisquares? See our catalog 256.
Eliptisqueres harmonize with contemporary interiors and lend distinguished dignity to ceilings.
Art Metal Eliptiçones in the suspended ceiling highlight the work area.
THE ART METAL COMPANY, Cleveland 3, Ohio

One of many interesting combinations of Andersen Casement Picture Window Units. Norman Johnson, A.I.A., Architect.

A lovely home with a lovely view, highlighted by the wood window beauty of Andersen WINDOWALLS. Always, specifying WINDOWALLS, you assure your clients a view with plenty of fresh air and sunshine . . . plus Andersen's weatherproof protection on windy, wet or wintry days.

For complete specification data on Andersen WINDOWALLS for homes you plan, see Sweet's or write Andersen for Detail Catalog and Tracing Detail Files.

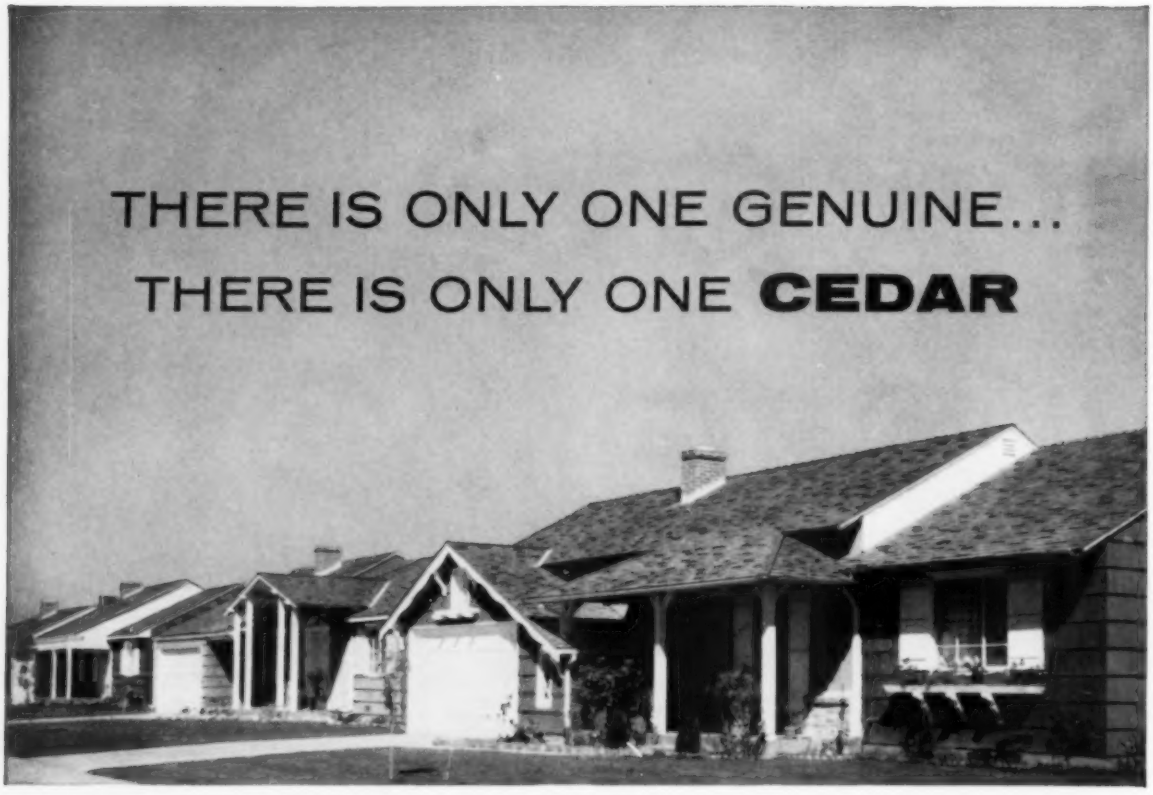
How to design outdoor beauty into daily living!

For details and specification data see Sweet's Architectural File, Sec. 17cAn or Light Construction File, Sec. 5cAn, pages 16 to 23.

Andersen Windowalls

TRADEMARK OF ANDERSEN CORPORATION

ANDERSEN CORPORATION • BAYPORT, MINNESOTA

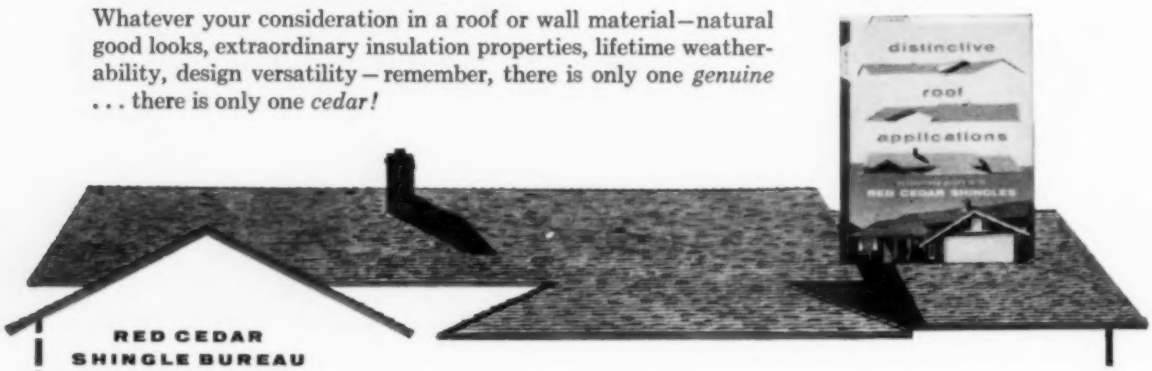


Genuine red cedar—with its natural good looks and time-honored character—enhances the design of *any* home.

When you combine the deep-etched beauty and texture of a cedar shingle roof with ranch-style walls of thick, colorful cedar shakes . . . quality appearance is the *natural* result.

Whatever your consideration in a roof or wall material—natural good looks, extraordinary insulation properties, lifetime weatherability, design versatility—remember, there is only one *genuine* . . . there is only one *cedar!*

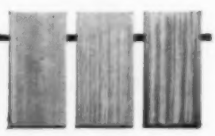
Send for this new full color book, *showing how you can achieve a variety of roof textures and a wealth of roof character using standard red cedar shingles.*



RED CEDAR SHINGLE BUREAU
5510 White Bldg., Seattle 1, Wash.
550 Burrard St., Vancouver 1, B. C.

Gentlemen: Please send my free copy of "Distinctive Roof Applications."

Name_____
Firm_____
Address_____
City_____ Zone_____ State_____



IN CONTEMPORARY DESIGN CEDAR IS TRADITIONAL

A Leading Tennessee Master Plumber reports Copper Tubes Cut Installation Time Over 50%

Light Weight—"The light weight of copper tube and fittings makes installation easier and faster—makes possible prefabricated sections like this, for example."

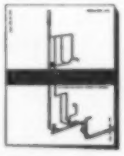
Prefabrication—"This double-Y and other sections can be preassembled out in the open or at the shop where men can work easier and faster—no lost time waiting for construction."

Easy to Handle—"The light weight of copper tube and fittings makes installation easy and fast even in cramped working areas. Our men like to work with copper."

Save Space—"Preassembled sections are connected easily. Stacks with fittings were installed in standard width partitions—gave me an extra 10 square feet of useable floor space."

When Harold E. Orr, president of Leopold & Orr, Knoxville, Tenn., built his new home recently, he installed an Anaconda all-copper drainage system. Mr. Orr, who is also a vice-president of the Associated Plumbing, Heating & Mechanical Contractors of Tennessee, Inc., reports that installation time was cut more than 50 per cent. His explanations for the saving are quoted under the photos.

For complete information, write for our free booklet, "Copper Tubes for Sanitary Drainage Systems." Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont. 5602



ANACONDA®

COPPER TUBES

Available through plumbing wholesalers

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How to open doors to CONTRACT AWARDING

The man with the V-BEAM bid not only opens doors, he closes contracts.

He has a structural support for floors and roofs that is lighter, more economical and yet has an actual carrying capacity of over twice the published loadings.

Macomber V-BEAMS extend construction dollars, and their proof of performance has been recorded by the industry's most honored proving ground—The Pittsburgh Testing Laboratory.

YOU CAN PROVE THE SOLID STRUCTURAL AND ECONOMIC VALUES OF V-BEAMS OVER ALL OTHER FLOOR AND ROOF SUPPORTS IN JUST ONE PROJECT WITHIN THE 48 FOOT SPAN RANGE.

STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER INCORPORATED

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• ENGINEERING • FABRICATING AND ERECTING •

NAILABLE STEEL JOISTS
•
LONGSPANS
•
BOWSTRING ROOF TRUSSES
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METAL DECK
•
V-LOK STEEL FRAMING
•
STRUCTURALS

LOCATION? FINANCING? DESIGN? PLAN?

YES... plus the *Lift to Living* extras that make a house a home

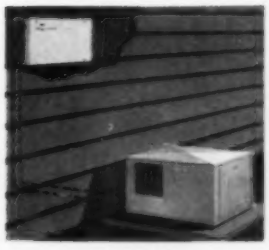
These extras are the brand name accessories your customers know and want. Such things as Frigidaire full-home air conditioning . . . summer and winter for year 'round comfort.

Air Conditioning? We'll agree air conditioning alone may not sell a house. But it can help you sell more homes in 1956 more quickly, more easily! What's more, this valuable experience will guarantee you the ability and local reputation to *keep pace* with residential air conditioning, which conservative estimates indicate will be included in most new homes in five years.

That's why Frigidaire is adding to its 1956 line many newly-designed and field-tested air conditioning units. With these, Frigidaire offers you a complete, nationally advertised line with a name consumers know and trust.

Your Frigidaire air conditioning dealer will be glad to work with you in planning heating and air conditioning for your new homes . . . in promoting and selling them . . . and in providing a factory-trained service organization that will assure homeowners the unequaled satisfaction these Frigidaire products provide. See the Frigidaire dealer or distributor nearest you or write FRIGIDAIRE DIVISION, *General Motors Corporation*, Dayton 1, Ohio.

FRIGIDAIRE CONDITIONERS
adaptable to variety of installations



REMOTE

YEAR 'ROUND

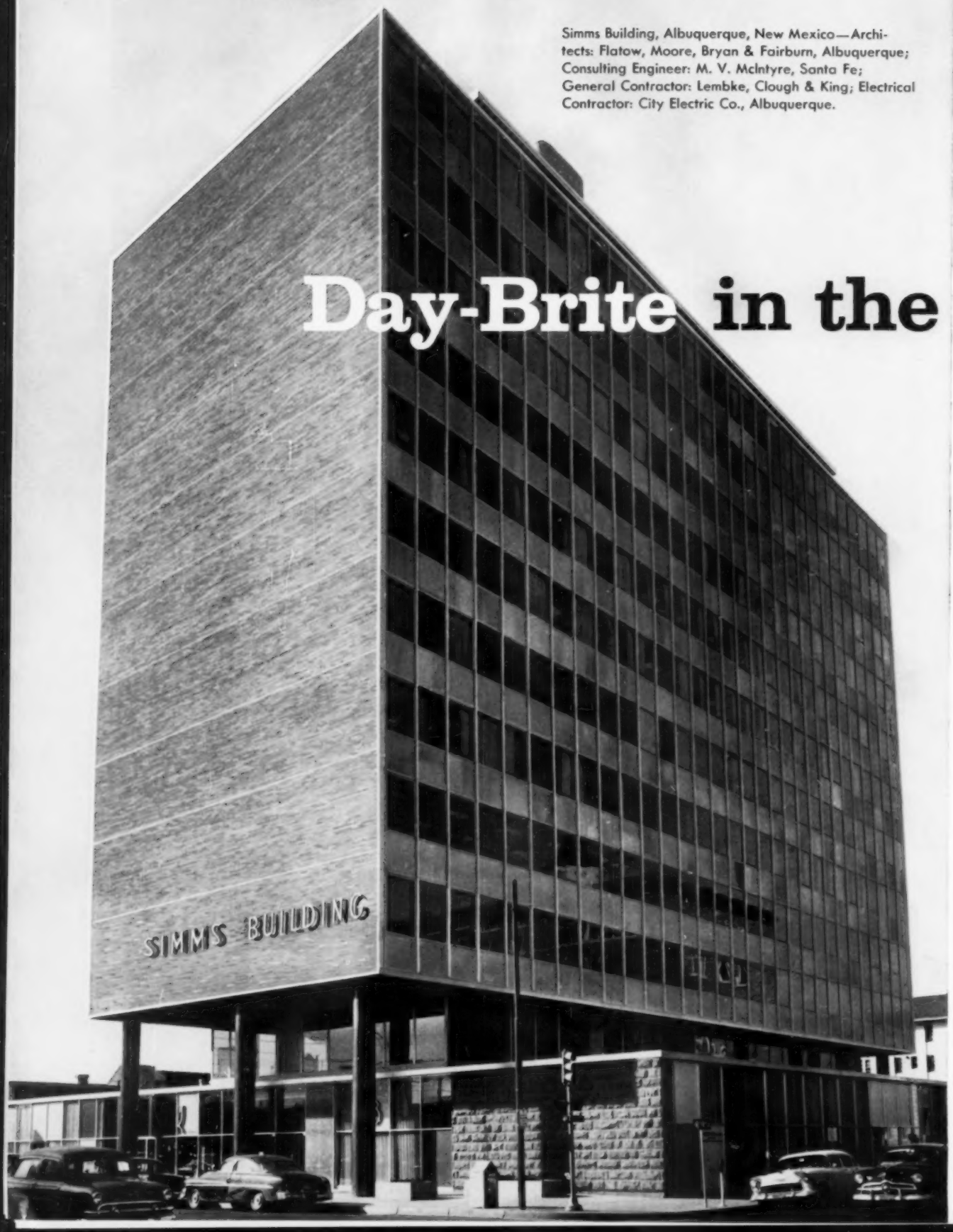
Frigidaire has a complete line of air-cooled and water-cooled residential units for add-on, combination, self-contained and remote-type installations.

FOR A NEW BOOST TO BUSINESS
GO FRIGIDAIRE
GENUINE GM VALUES

Lighting by DAY-BRITE Lighting Fixtures makes the big difference...

Simms Building, Albuquerque, New Mexico—Architects: Flatow, Moore, Bryan & Fairburn, Albuquerque; Consulting Engineer: M. V. McIntyre, Santa Fe; General Contractor: Lembke, Clough & King; Electrical Contractor: City Electric Co., Albuquerque.

Day-Brite in the



Large office spaces are well-lighted throughout, especially on desk tops.

"Land of Enchantment"

This "straight-run" office area illustrates easy adaptability of Day-Brite Mobilex to different lighting requirements.

Quiet dignity, combined with uniform over-all lighting, in an executive office.

The most modern building in New Mexico—land of enchantment—is the recently completed 12-story Simms Building at Albuquerque . . . It is lighted by Day-Brite—another of many examples of how these modern fixtures lend themselves to modern architectural design.

The famous Day-Brite ribbed-glass enclosed MOBILEX® fixtures, recessed in acoustical-tile ceilings, were used throughout the rental-office areas. The illustrations show how these fixtures assure uniform, eye-comfort illumination on desk tops and other work areas.

Before you specify, see, examine and compare Day-Brite—look at the fixtures, not just the pictures. Your Day-Brite representative will gladly show you. Look for him in your classified phone directory. Or, send for 8-page descriptive Architectural File. 61118

Day-Brite Lighting, Inc.

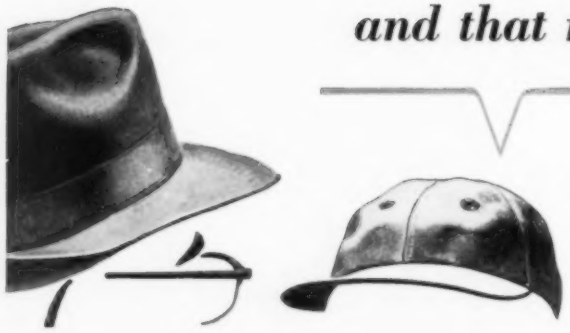
"DECIDEDLY BETTER"
DAY-BRITE
Lighting Fixtures

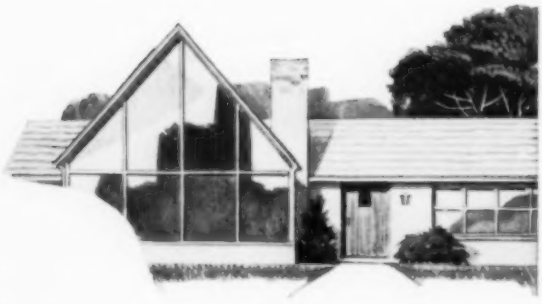
5405 Bulwer Ave.
St. Louis 7, Missouri

NATION'S LARGEST MANUFACTURER OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT

"When you can get a premium glass at no premium in price..."

"Sure, why not use it— and that means AMERICAN!"





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American manufactures sheet glass with the least distortion and the greatest clarity, whiteness and luster.

LUSTRAGLASS—single and double strength for ordinary glazing.

LUSTRACRYSTAL—economical heavy sheet glass for larger openings and special applications.

LUSTRAWHITE—a picture glass of exceptional clarity and flatness.

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SUPRATEST—a laminated safety glass.

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WATCH OUR PRODUCT FAMILY GROW

The man-with-the-pipe is right! The more glassed-in areas there are on your projects, the more important it becomes to use the whitest, clearest, most lustrous glass you can find. And that *does* mean American LUSTRAGLASS or LUSTRACRYSTAL—for top quality at no extra cost.

● Prove it for yourself on your next job. Ask your American distributor how LUSTRAGLASS can give your client the benefit of more light transmission, and afford the least amount of distortion over large areas . . . how LUSTRACRYSTAL can save you as much as 35% in many applications. *Look in your Phone Directory for the name of the American distributor in your territory.*

WSW 6049

For the finest quality in **MODERN GLASS**

Use American

Made by **the AMERICAN WINDOW GLASS CO., PITTSBURGH, PA.**

Plants at: Arnold, Pa. • Ellwood City, Pa. • Jeannette, Pa. • Okmulgee, Okla.

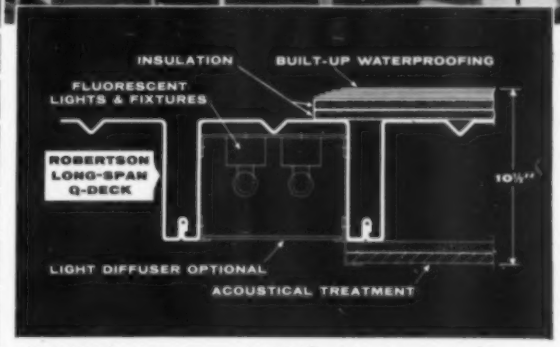
Robertson Long Span Q-Deck
cuts cost 3 ways in School Construction

1 Extra-strong Long Span Q-Deck is an ideal material for use in "reduced budget" school construction because it saves time and basic materials. Spans up to 32 feet completely cover classrooms and include corridors or outside cantilevered walkways thus reducing labor and structural steel.

2 Long Span Q-Deck used as a ceiling possesses a measure of acoustical benefit, therefore only perimeter treatment of acoustical material becomes necessary as seen in the photograph. This again saves time and material.

3 Flush lighting can be installed within the cells of Long Span Q-Deck to produce an extremely attractive, efficient, low-cost lighting system, as shown in the photograph and detail to the right. Use the coupon to write for further details on this remarkable deck — designed for multiple, money-saving benefits.

ROBERTSON LONG SPAN
Q-DECK



With this 3-way system, only 10½" of depth is required for the entire roof and ceiling section.

H. H. Robertson Company

2405 Farmers Bank Building • Pittsburgh 22, Pennsylvania

In England—Robertson Thain Ltd., Ellesmere Port, Cheshire
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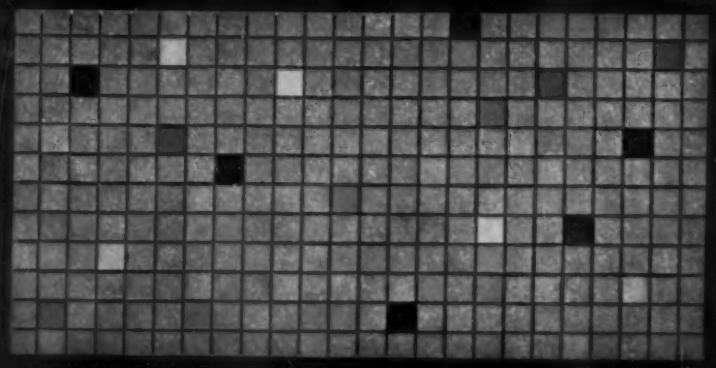
Please send additional information on Long Span Q-Deck.

NAME _____ TITLE _____

COMPANY _____

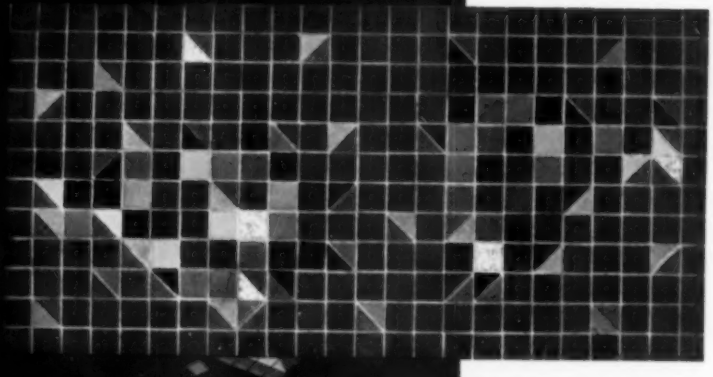
ADDRESS _____ CITY _____

the newest thing in ceramic tile...



◀ Spivak Suntile Design No. 14 (Static Buckshot)
Field color: 131 Birch

Max Spivak designs in *Suntile* ceramics



▲ Spivak No. 9 (Tropical Fish)
Field color: 271 Turquoise

SEND COUPON FOR DATA, FULL COLOR RANGE

THE CAMBRIDGE TILE MFG. CO.
P.O. Box 71, Cincinnati 15, Ohio

Please send me:

☐ *Folder showing Suntile patterns by Max Spivak in full color.*

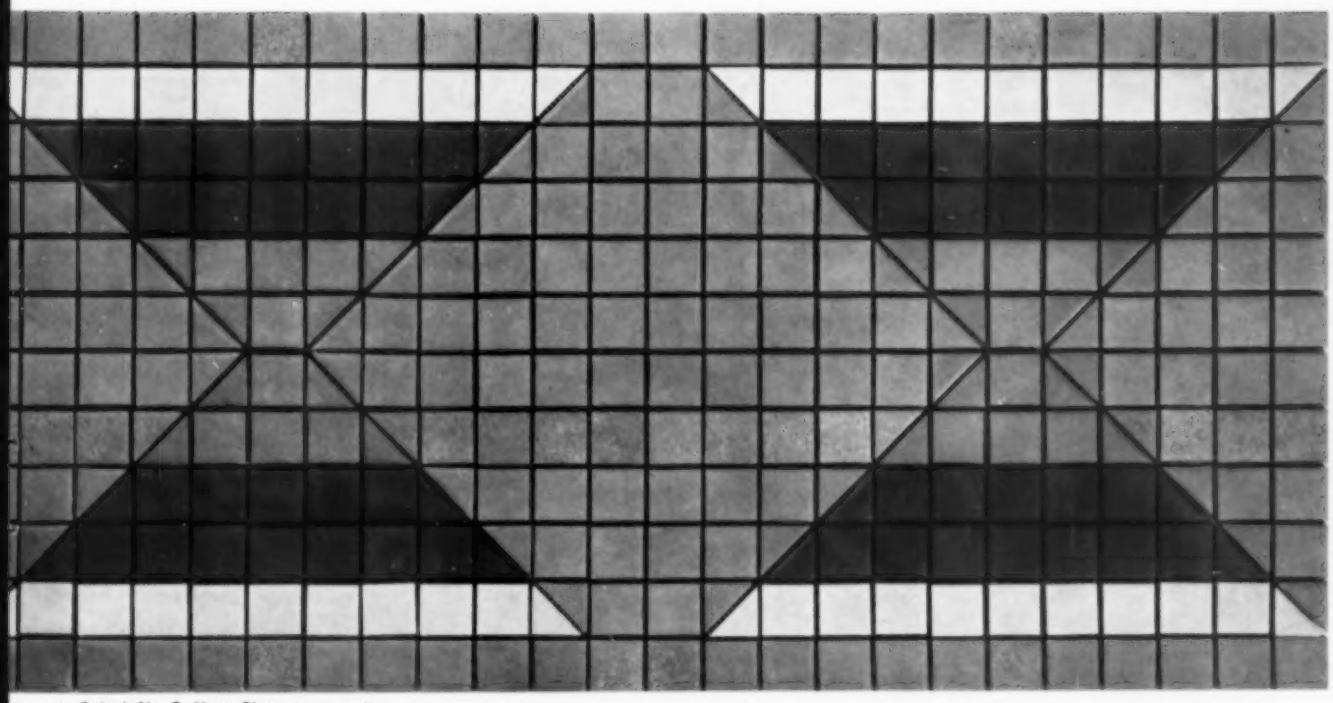
☐ *New Suntile catalog giving data on the full line.*

NAME

ADDRESS

CITY

ZONE *STATE*



▲ Spivak No. 8 Hour Glass *(ungrouted)*
Field color: 253 Light Dresden Blue

Here is the basis for an entirely fresh approach to wall and floor design–a group of stock patterns in economical Suntile Ceramics by Max Spivak, one of the leading ceramic muralists in the architectural field.

Planned to take full advantage of both the decorative and practical characteristics of ceramic tile, these patterns permit a wide variety of design treatment on a relatively modest budget.

Each of the nine basic motifs is made up of 1″ x 1″ unglazed tile mounted on regular 2′ x 1′ sheets for quick installation. Only a few of the many design possibilities offered by each pattern are suggested here.

Because only rugged, natural clay and porcelain Suntile are used, these patterns are equally serviceable in walls, floors or counter tops—indoors and out.

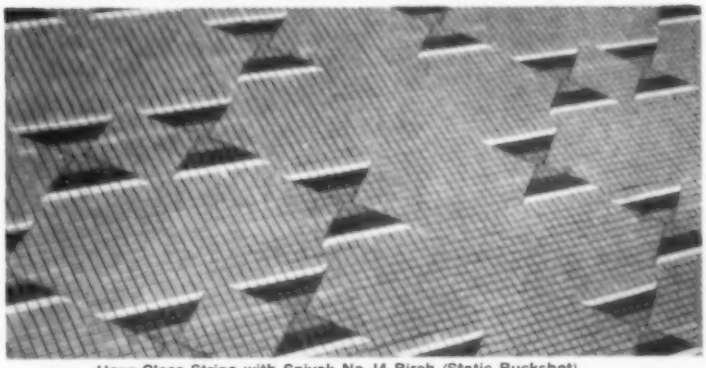
For guaranteed installation, call your Authorized Suntile Dealer. His name is listed in the yellow pages of your phone book.

Spivak Suntile Designs, Copyright 1956

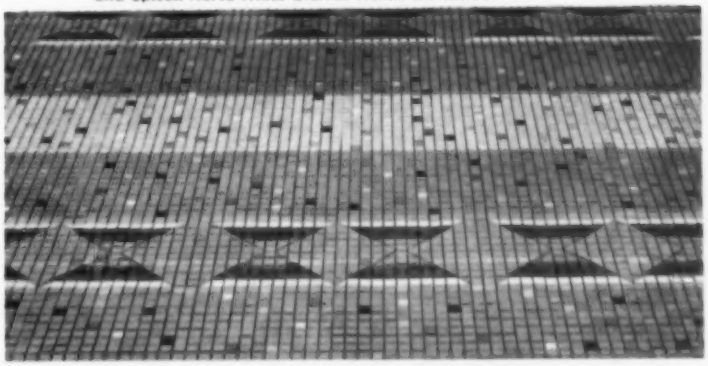
THE CAMBRIDGE TILE MFG. CO.

P.O. Box 71, Cincinnati 15, Ohio

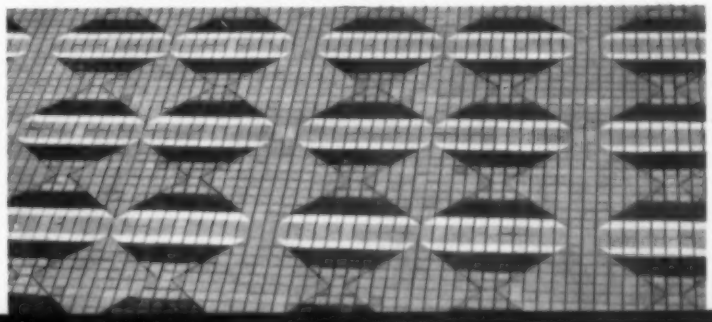
▼ Hour Glass Motif with Field color of 253 Light Dresden Blue



▼ Hour Glass Stripe with Spivak No. 14 Birch (Static Buckshot) and Spivak No. 16 White Granite (Static Buckshot)



▼ Overall Pattern with Hour Glass Motif



ZONE STATE

A UNARCO
"packaged" air conditioning unit being installed in otherwise waste space between ceiling and roof in one of the stores in the beautiful new Wallace Town Shopping Center.

Waste SPACE SAVES *Selling* SPACE

with compact UNARCO AIR CONDITIONING

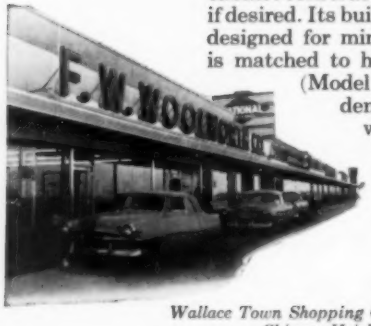
So efficiently engineered...so compact, are UNARCO'S "packaged" air conditioning units, that they may be installed in many an out-of-the-way area generally considered "waste space"!

The UNARCO AECR is available in 12 various arrangements, giving complete flexibility in field installation. First, it is of single cabinet construction and can include heating if desired. Its built-in evaporative condenser, designed for minimum water consumption, is matched to handle the equipment load! (Model SCR with water-cooled condenser uses city water supply, well or cooling tower.)

Three simple connections ...*power, duct work* and *water supply*...make UNARCO units quick and simple to install. This means lower installation costs, less maintenance and more economical operation for stores, large offices and industrial users!

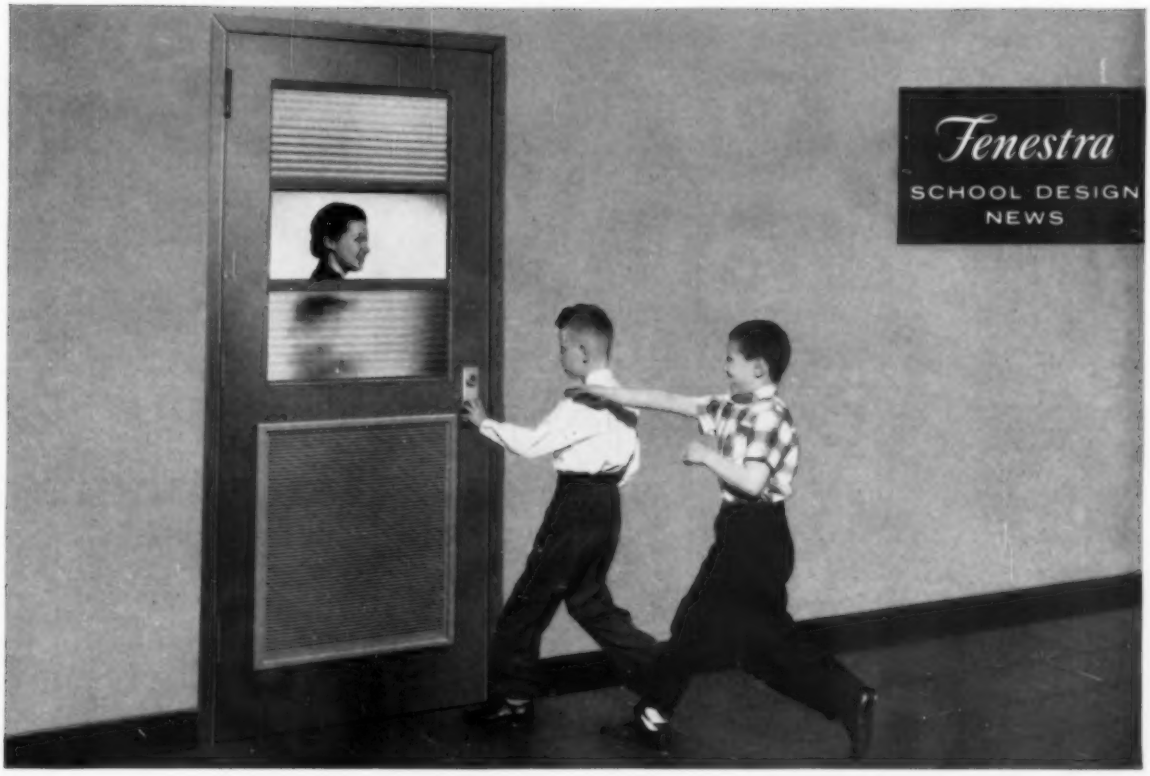
And by locating the compact UNARCO unit as above, and in otherwise waste space such as ground outside of building, supported or suspended above floor area or on the roof... valuable floor area is salvaged for operational, profit-making use!

Write the Heating & Cooling Division, Dept. PA-106, for the interesting facts on the full range of AECR and SCR air conditioning units, 7½ through 60 tons.



Wallace Town Shopping Center, Chicago Heights, Ill. Architect, Jens J. Jensen. Sponsors & Builders, Charles L. Schrager Company.

UNION ASBESTOS & RUBBER COMPANY
HEATING AND COOLING DIVISION
332 S. Michigan Ave., Chicago 4, Illinois
Designers...Engineers...Fabricators of Air Conditioning Equipment



Save up to $100 per door with Fenestra's

New Fen-Air Louvered School Door

Custom quality at stock door prices with Fenestra Hollow Metal Door-Frame-Hardware Units

Here's a handsome louvered metal door designed for modern schools. It gives complete classroom privacy, *plus* free air circulation to corridors. The perfect door for air-conditioning and forced warm-air heating systems!

Like all Fenestra Doors, the Fen-Air is also designed to save you money—as much as $100 per door, installed, compared with custom-built louvered doors. Here's why!

First, Fenestra Doors cost less because they are mass-produced to custom-quality specifications.

Next, they cost less *to install* because the door and frame are pre-fitted and machined for all template and surface-mounted hardware. *One man with a screw driver can install it in minutes!* You never have to cut, fit, mortise, drill or tap a Fenestra Door.

Finally, you save on maintenance year after year because Fenestra Doors can't warp, swell, stick or splinter. They always swing open smoothly and close quietly.

Fen-Air Doors feature the New Fenestra Lock-Miter Joint rolled steel frame, Bonderized, with a baked-on prime-paint coat. High-quality Fenestra hardware and accessories complete the package.

The door illustrated above is glazed with a combination of patterned and clear glass designed especially for school classrooms. The horizontal bars may be removed for installation of a single pane of glass if desired.

Before you choose the doors for your new school building, be sure to call your local Fenestra Representative—listed in the Yellow Pages—for complete information and prices on Fenestra Fen-Air Louvered Door-Frame-Hardware Units or mail the coupon below.

Fenestra® INCORPORATED

HOLLOW METAL DOOR-FRAME-HARDWARE UNITS

YOUR SINGLE SOURCE OF SUPPLY FOR DOORS • WINDOWS • BUILDING PANELS

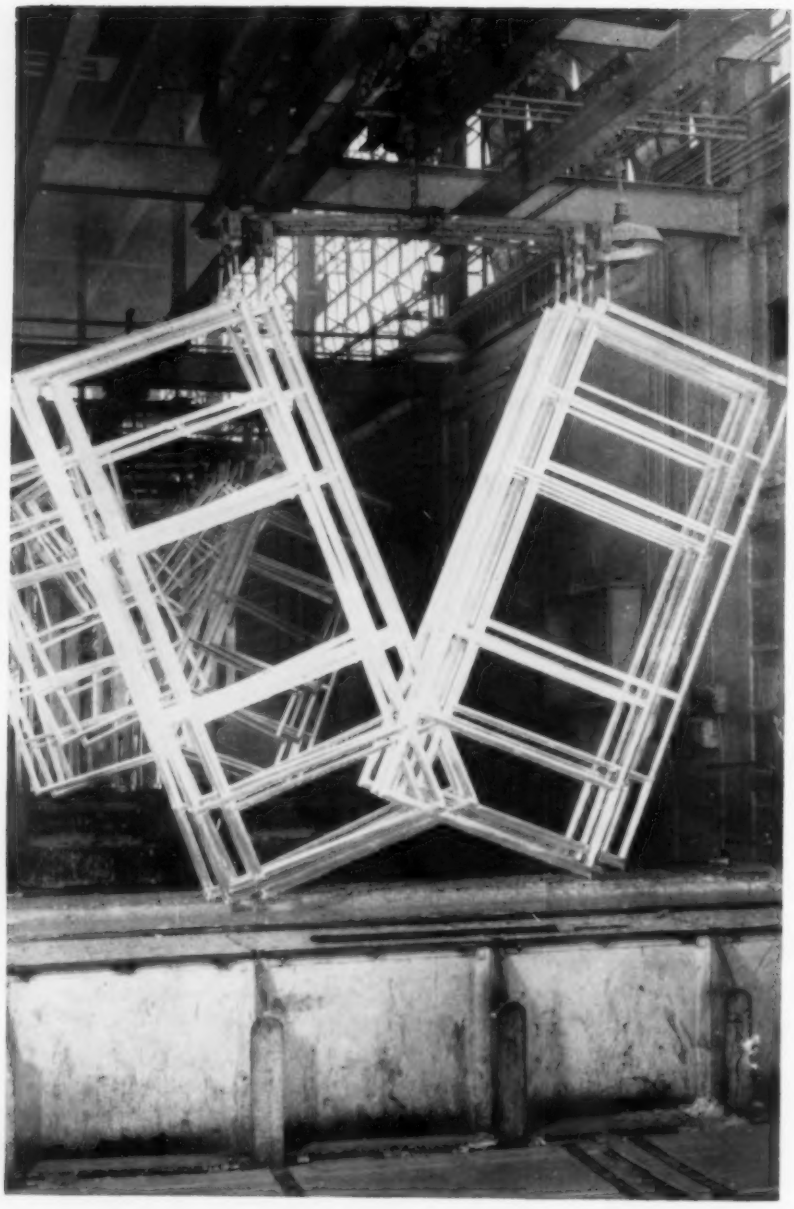
Fenestra *Incorporated*
PA-3409 Griffin Street, Detroit 11, Michigan
Please send me complete information on the New Fenestra Fen-Air Louvered Door for Schoolrooms.

Name_____

School_____

Address_____

City_____ State_____

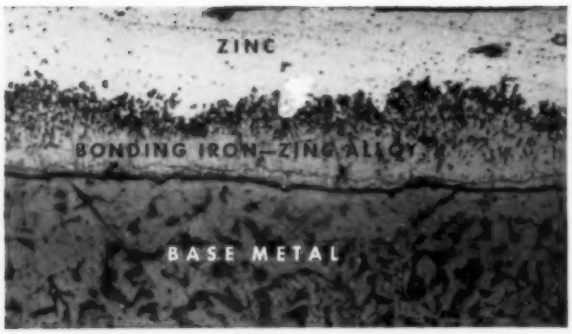


FACTS ABOUT THE FENESTRA

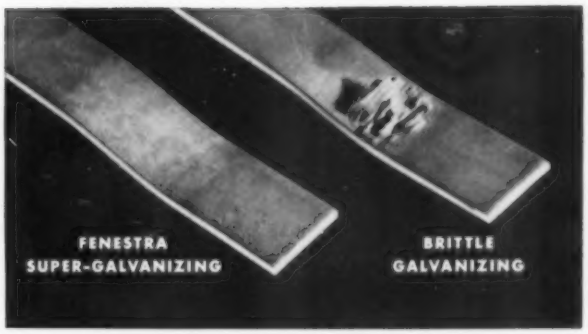
Fenestra Windows are cleaned, pickled, rinsed, fluxed, dried and then galvanized by completely immersing in molten zinc. Bonderizing adds extra protection and a smooth silver-gray finish.

The Fenestra process controls automatically the exact time and temperature for the finest finish.

Fenestra Galvanized-Bonderized Industrial Windows used in this building for John Hassall, Inc., Westbury, New York, to reduce window maintenance costs. Ask your local Fenestra representative for information on the complete line of Fenestra Industrial Windows. *Architect-Contractor*—Winninger Construction Corporation, New York.



This microphotograph shows how the zinc coating alloys with the steel base. Fenestra's Galvanized-Bonderized Finish is *self-healing*—small breaks in the surface are automatically closed by sacrificial action of the zinc, leaving the steel protected underneath!



Bend Test demonstrates the durability of Fenestra Super Hot-Dip Galvanizing. A gradual iron-to-zinc transition from the base metal, through zinc-iron alloys, to the outer layer of relatively pure zinc assures a lifetime bond. Ask your Fenestra representative for this demonstration.

GALVANIZED-BONDERIZED FINISH

Exclusive Fenestra Process gives you steel-strong windows with a self-healing lifetime finish that needs no paint!

Many people ask us, "How long can Fenestra Galvanized-Bonderized Steel Windows go without painting?"

The best answer we know is to refer the inquirer to some of our older installations. Like the Fenestra Windows in Mill No. 2 of the American Woolen Company, Shawsheen Village, Massachusetts. They were installed unpainted 35 years ago and haven't been painted since, inside or out. They're still in excellent condition in spite of extremely high humidity conditions in this building.

Or, the Fenestra Windows in the Galveston Wharf Company building, Galveston, Texas. These windows were installed unpainted in 1926, have never been painted and are in excellent condition after 30 years of fog, pounding storms and destructive salt spray and air.

The pictures on these pages show you why Fenestra Galvanized-Bonderized Windows need no paint. They also show a couple of our customers who will never again need to worry about costly window maintenance.

When you combine all the advantages of the strength of steel with Fenestra's Super Hot-Dip Galvanizing, the result is a window that gives you the lowest lifetime window maintenance cost. And, best of all, the Fenestra Galvanized-Bonderized Finish costs no more than the average 2 coats of field paint.

This lifetime finish is available on all types of Fenestra Windows—Intermediate, Industrial and Residential. Ask your local Fenestra representative for complete information or mail the coupon below.

Fenestra® | GALVANIZED-BONDERIZED STEEL WINDOWS

INTERMEDIATE • INDUSTRIAL • RESIDENTIAL

YOUR SINGLE SOURCE OF SUPPLY FOR
WINDOWS • DOORS • BUILDING PANELS

Fenestra PA-3409 Griffin Street
Detroit 11, Michigan

Please send complete information on Fenestra Galvanized-Bonderized Steel Windows.

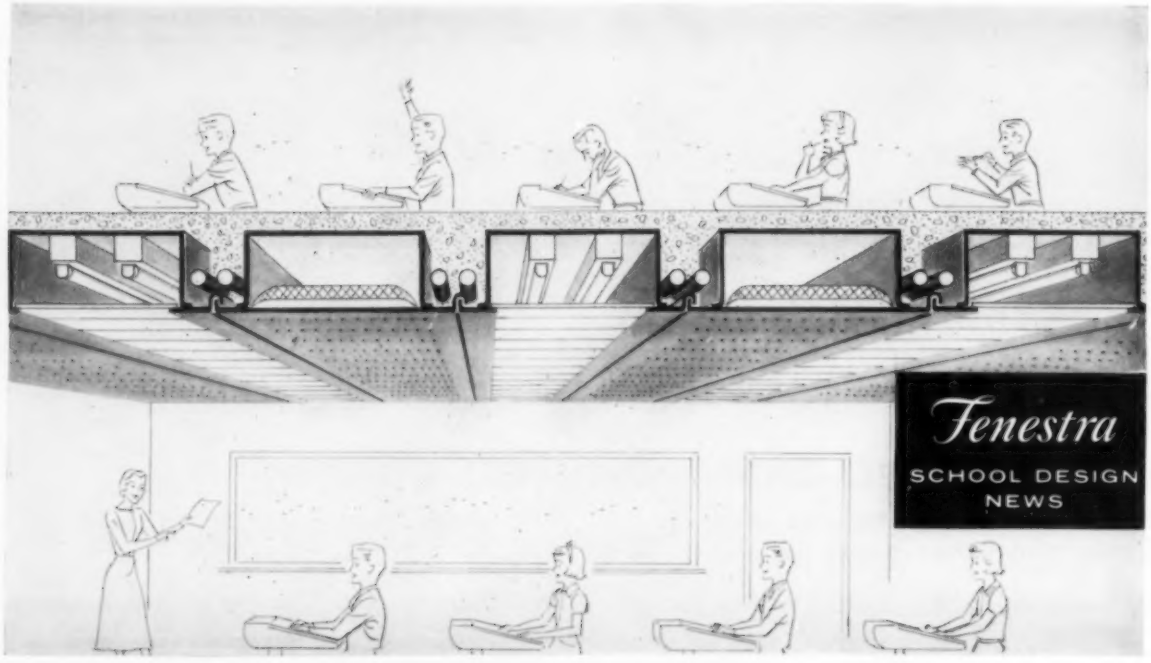
Name _____

Firm _____

Address _____

City _____ State _____

School Board Members like the good looks and low maintenance costs of Fenestra Galvanized-Bonderized Intermediate Windows. Here's one of many recent installations. Darby Elementary School, Darby, Pa. *Architect*—Horace W. Castor, Philadelphia. *Contractor*—Sidney Elkman, Philadelphia.

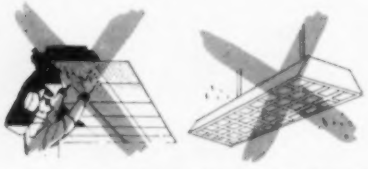


Save time and money on multistory fireproof construction with

New Way to Build Schools

New Fenestra TAC Panel System replaces

special concrete forms, expensive shoring,



separate acoustical treatment and lighting

with one multi-purpose building panel unit!

Here is an entirely new concept in the design and construction of fireproof multistory school buildings. NEW Fenestra* Troffer-Acoustical Panels give you metal pan acoustical ceilings and recessed lighting—features that usually require extra cost, time and labor—*built right in the structure itself.*

Now, instead of installing separate concrete forms with expensive shoring, separate acoustical ceilings and separate recessed lighting troffers, your contractor simply installs low-cost, long-span Fenestra TAC Panels. These modular prefabricated building panel units *replace all* these expensive materials. They are installed by one trade!

You save money on materials and labor, and your school building is completed faster. Maintenance costs are also reduced for the life of the building. The metal pan acoustical ceilings can be washed or repainted as often as needed, without affecting the acoustical treatment. There is no hanging ceiling or "stuck-on" acoustical material to be damaged or replaced.

If you are planning a multistory school of fireproof reinforced concrete construction, be sure your architect knows about Fenestra Troffer-Acoustical Panels. Show him this ad and ask him to get detailed information from your local Fenestra Representative, or mail the coupon below.

*Trademark

Fenestra INCORPORATED TAC TROFFER-ACOUSTICAL BUILDING PANELS

YOUR SINGLE SOURCE OF SUPPLY FOR DOORS • WINDOWS • BUILDING PANELS

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RIXSON UNI-CHECKS with no. 36 fusible link hold-open arm

ideal for interior fire doors

The special U.L. approved RIXSON Uni-check can be supplied with a hold-open that also has Underwriters' Laboratories approval. The RIXSON no. 36 hold-open arm (illustrated) holds the door at 90°. In case of fire the fusible link releases at 160°F and the door closes automatically. A firm push will also close the door. The hold-open is easily engaged or disengaged by a turn of the control knob.

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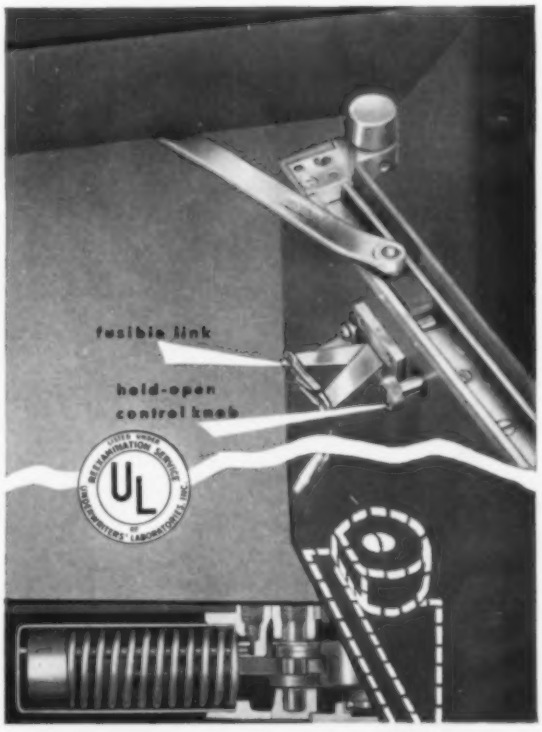

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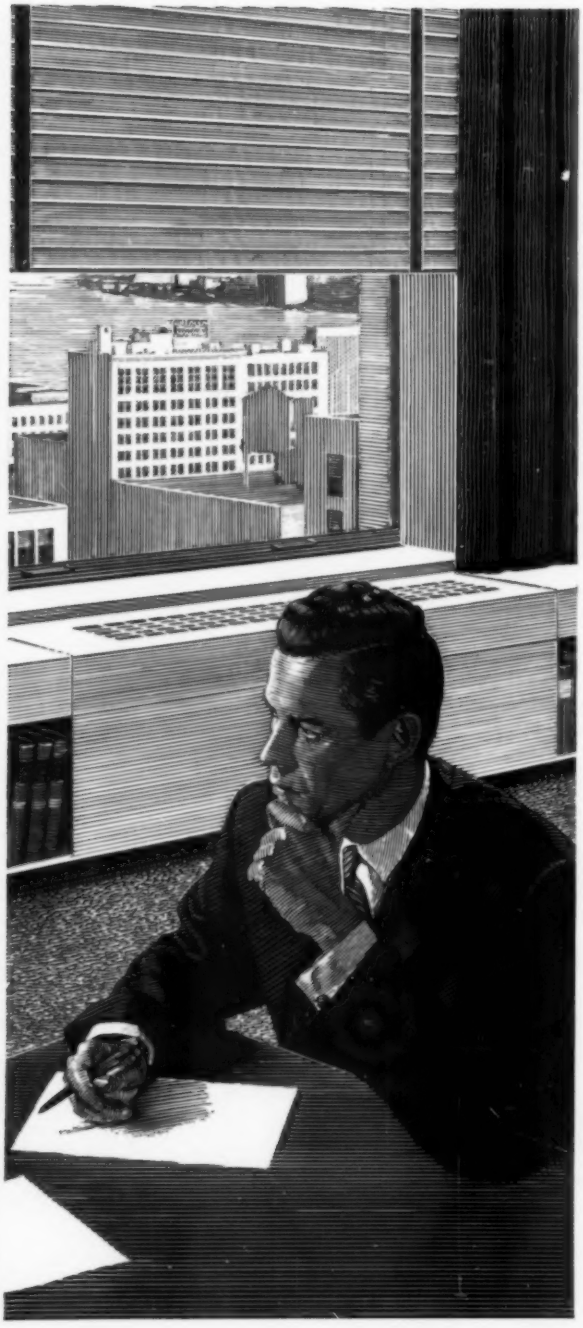
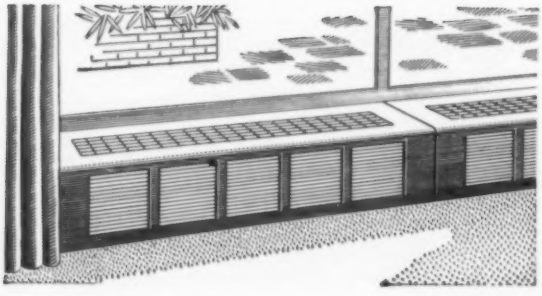
Carrier again makes news





Office Air Conditioning Goes Modular!

Handsome new Weathermaster units fit any window or wall treatment—are assembled from standard "building blocks"

Now the world's finest air conditioning system—the Carrier Weathermaster* System—gets the world's most flexible and adaptable under-the-window units. New Modular Weathermaster units are based on the "building-block" idea. Standard components can be assembled into units that fit any size or shape space you may plan. The units actually become part of the architecture in any multi-story, multi-room building—old or new.

THEY'RE MODULAR! If you are modernizing an older building with traditional windows, you can plan for the units to hang on the wall, up above the baseboard. If you are designing new buildings with low windows, units can hug the floor—as little as a foot high. If your plan requires it, these units can be extended from wall to wall or column to column—or be confined to the wall space right under the window.

THEY'RE MODULAR! You can plan the units so that they become part of the wall. You can make them look like a decorative ledge ... or built-in cabinets ... or modern bookcases. There's no "tacked-on" look. And the pieces are so easy to assemble that you can install them in record time.

THEY'RE MODULAR! With Weathermaster units, you can save on ductwork. You can use fewer vertical risers, because the air supply can be extended through handsome prefabricated enclosures to units in series. And you have greater freedom in location—for lines can enter at the bottom of the unit or either side.

THEY'RE MODULAR!—plus all the famous Carrier Weathermaster advantages. A twist of the dial on the unit in each room brings the exact climate you want, any time of the day, any day of the year. Operation is quick, quiet, automatic, dependable.

Why not learn *all* of the reasons why the new Carrier Weathermaster units fit *any* plan? Find out how they give you unlimited flexibility in design. Call the nearest Carrier office or write for the big new colorful booklet that will help you picture handsome Modular Weathermaster units in the buildings you are planning. Carrier Corporation, Syracuse, New York.

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Architecture Building

GEORGIA INSTITUTE OF TECHNOLOGY

Architects: BUSH-BROWN, GAILEY & HEFFERNAN
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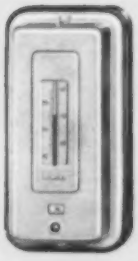
POWERS

Thermostatic Control System helps provide comfortable atmosphere for learning

"This million dollar building is unique in the annals of architectural school buildings," comments Director Bush-Brown, "in that the State of Georgia has provided for all needs in a building designed and supervised by those who will occupy it—members of the architectural staff."

The large drafting room above has a mezzanine with individual study cubicles. Auditorium and lecture room is air conditioned as is the library which preserves books and makes for year 'round comfort. Other spaces include classrooms, offices, gallery below and rooms used for judgments and exhibitions.

Consult Powers on your temperature and humidity control problems. Experience we have gained in thousands of significant buildings may be helpful to you.



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NEW Forestone® CEILING BOARD BRINGS FISSURED BEAUTY TO EXPOSED

Simpson now brings you Forestone Ceiling Board (fissured woodfiber acoustical material) in new large sizes. Forestone Ceiling Board, ¾" thick, is made for use in 24"x24" and 24"x48" exposed grid suspension systems. This type of ceiling is ideal for stores, banks, schools, or any structure where economy and accessibility are desired. Forestone is also available in 12"x23¾" units for use in exposed Z and T suspension systems.

Advantages

1. BEAUTIFUL The irregular fissures of Forestone Ceiling Board create a travertine-like ceiling, with interesting character in contrast to the severity of plain board.

2. ECONOMICAL Forestone Ceiling Board is low in cost, and quickly installed in economical exposed grid suspension systems, keeping labor costs at a minimum.

3. EFFICIENT Forestone Ceiling Board, like regular Forestone, has high sound absorbing efficiency over a broad frequency range. It offers improved sound insulation properties between rooms where partitions stop at the suspended ceiling.

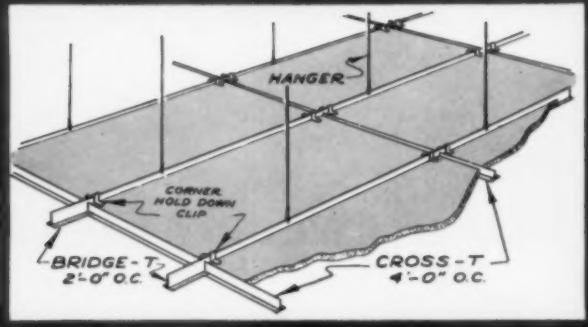
4. ACCESSIBLE Forestone Ceiling Board panels may be removed individually for accessibility to the utilities above.

5. PAINTABLE Because of its fissures and surface irregularities, Forestone Ceiling Board may be painted repeatedly by ordinary methods without appreciable loss of efficiency.

6. MODULAR The two-foot module of Forestone Ceiling Board lends itself to economical incorporation of lighting and ventilating units necessary to integrated ceiling installations.

INSTALLATION DETAILS

Forestone Ceiling Board is made to fit 24"x24" and 24"x48" exposed grid suspension systems. These systems are composed of lightweight inverted T-sections into which the board is laid, as illustrated in the schematic drawing. The grid is usually suspended directly without the necessity for 1½" channels.



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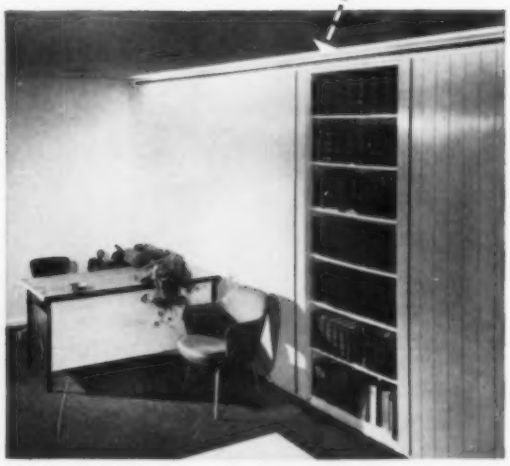
Distinctive Air Diffusers by AGITAIR®

Ceiling installation of STRIPLINE slot diffusers.

for all interiors



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STRIPLINE slot diffusers are slenderly designed, inconspicuous, practical and versatile. These slot diffusers can be located in walls, ceilings, coves, moulds, window reveals and stools or almost anywhere to suit interior design.

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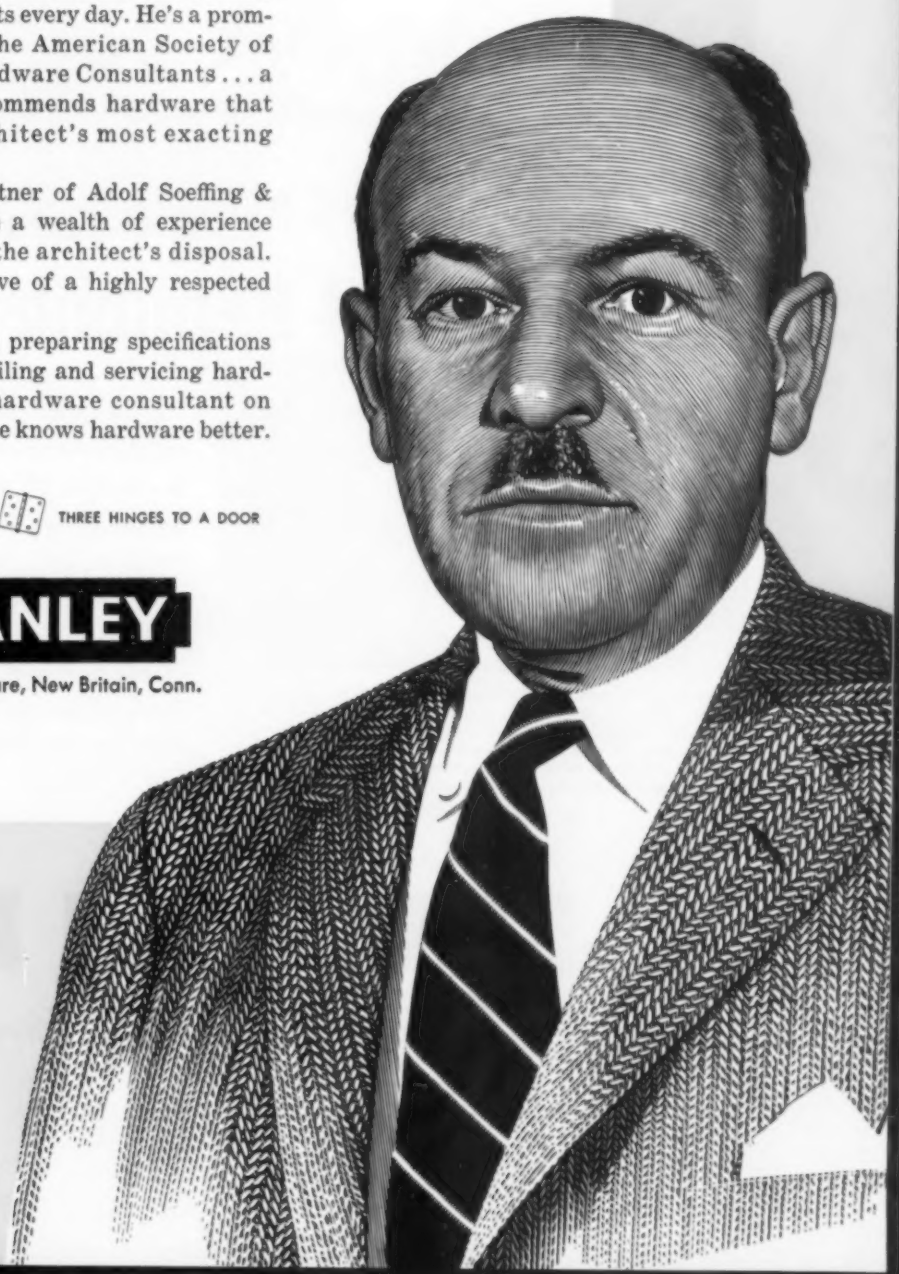
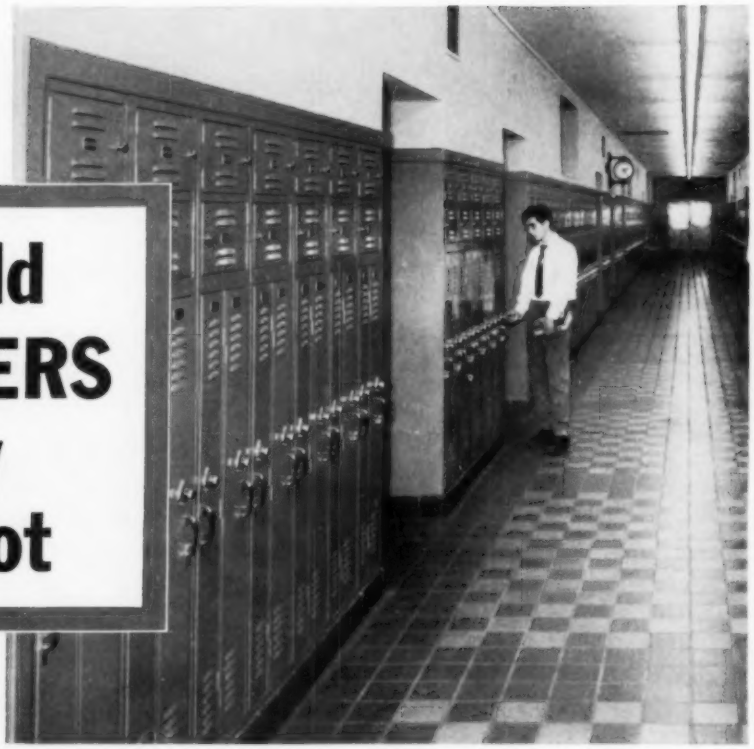


How to build MORE LOCKERS into every corridor foot



Install Republic Two Person

WORLD'S MOST WIDELY USED GENERAL PURPOSE LOCKER is this big Republic Single Tier Steel Locker. It's especially popular in locker rooms where both roominess and ample ventilation are a necessity. May be equipped with padlock, built-in combination, or with key-operated lock. These three locking systems are available on all Republic Standard Steel Lockers.

These space-saving units provide separate compartments for two people in the same floor area used by standard 15″ single tier lockers. Accommodations for any given corridor are actually doubled! And yet students have ample room for garments, school supplies and other personal belongings.

The Two Person Locker is just one of many types of standard steel lockers made by Republic's Berger Division for every conceivable requirement. In the business more than 65 years, Berger has sold and

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Steel Lockers

installed more lockers than any other manufacturer in the world. Why not take advantage of this experience?

Investigate Berger's complete planning and installation service—from technical planning and engineering assistance to full responsibility for proper installation—right down to the final bolt. Get the interesting facts from your Berger representative. Or mail coupon for illustrated booklet giving specifications and prices.

STEEL

and Steel Products

REPUBLIC'S STEEL BOOK SHELF UNITS, made by the Berger Division, are sturdy, attractive, widely used in school libraries. Above pictures show shelving before and after books are in place. Shelves are easily moved to suit current requirements. Berger's shelving experts will be glad to help you plan. Send coupon for facts.

Truscon Metal Lath, the completely fireproof plaster base, provides unmatched protection for walls, ceilings, partitions and stairway enclosures. Widely used in school construction, it's durable, long-lasting, and crack-resistant. Send for illustrated booklet giving more details.

Truscon "O-T"® Steel Joists for floor and roof supports are light, strong, and fire-resistant. A product of Republic's Truscon® Division, they're easy to handle, lessen the time and labor required for erection, save material in supporting framework and foundations. Send for illustrated booklet with complete facts.

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☐ Lockers ☐ "O-T" Joists
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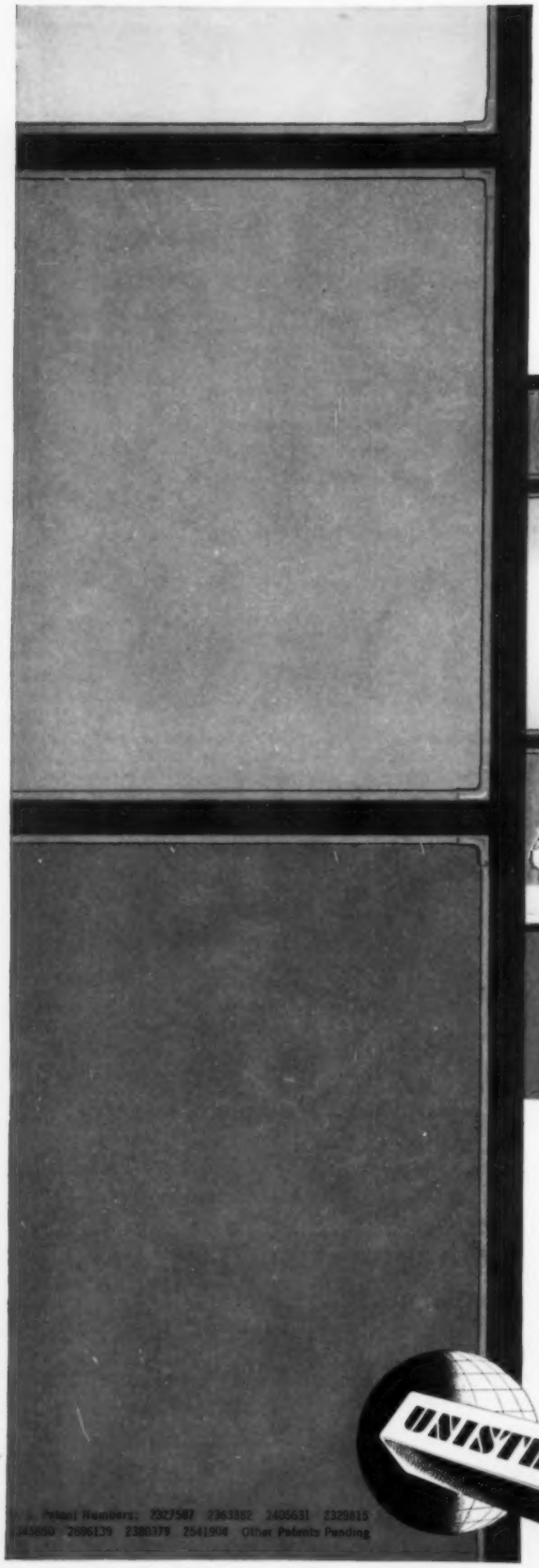

Low-cost partitions you can erect... UNISTRUT®

What kind of partitions do you want? Plywood, hardboard, plasterboard, glass, metal? Do you want a simple railing, a 7-foot-high partition, a 10-foot-high partition, one that goes clear to the ceiling or any combination of these?

No matter! With the flexible UNISTRUT Partitioning System you can have just the kind of partition you want... out of just the material you want... to fit exactly the space you have available... and, above all, at extremely low cost. Yes, and UNISTRUT Partitions are easy to erect. The framework is of UNISTRUT Channel... amazingly strong yet amazingly simple. Paneling may be chosen from any basic material.

All material is easily movable and fully re-usable—giving you maximum economy, maximum flexibility!

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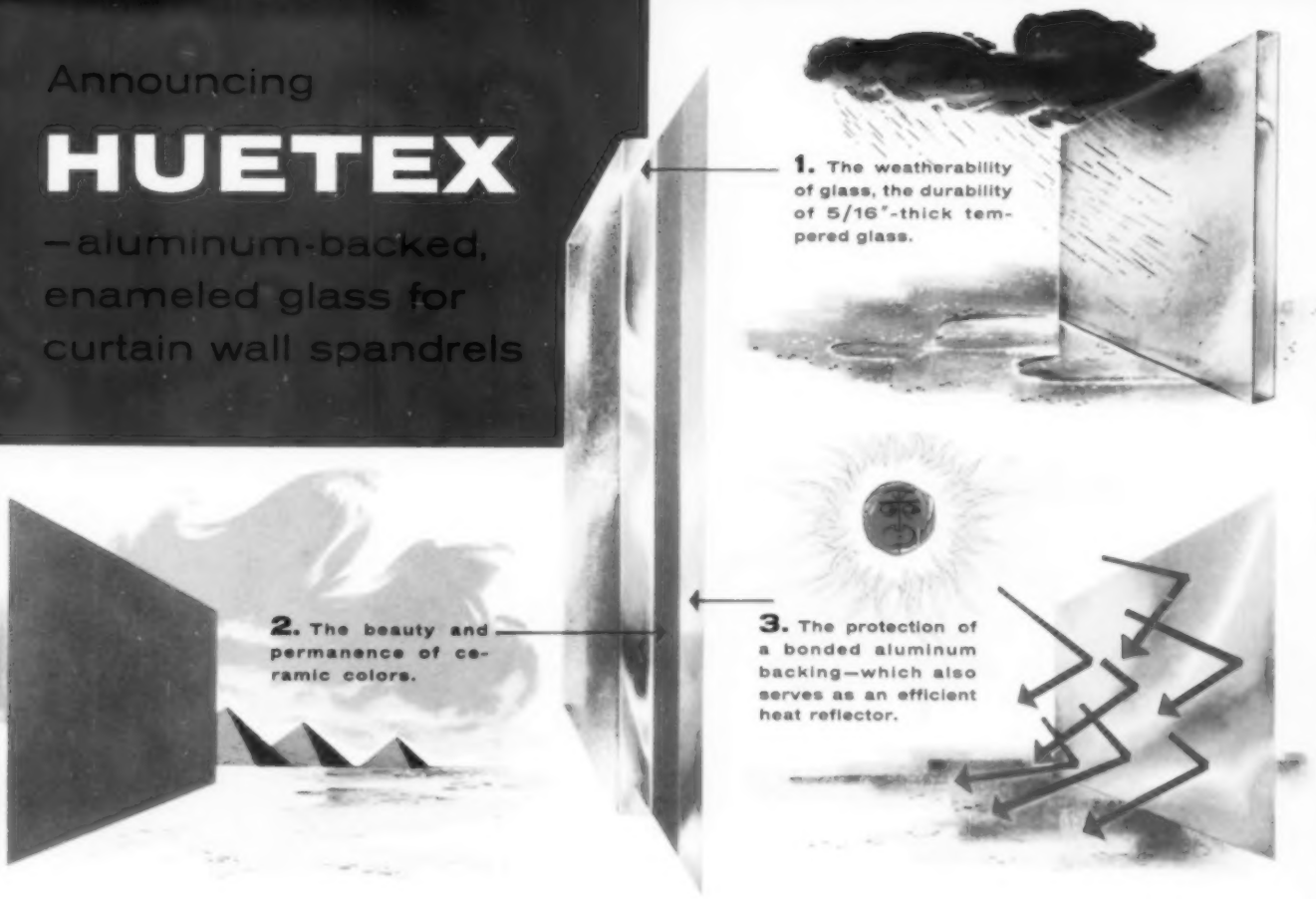
HUETEX

—aluminum-backed, enameled glass for curtain wall spandrels


1. The weatherability of glass, the durability of 5/16"-thick tempered glass.
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It's all fused into one unit for a combination of rich, permanent color, pleasing surface texture and reflective insulation.

The uniformly textured surface of the patterned glass subdues bright reflections.

It's Tempered. *Huetex* is tempered to a mechanical strength of 3 to 5 times that of regular glass of the same thickness; 6 to 8 times the impact strength.

Huetex can be used with a variety of framing systems and insulation of your choice. For further information, write to Libbey·Owens·Ford Glass Co., 608 Madison Avenue, Toledo 3, Ohio.

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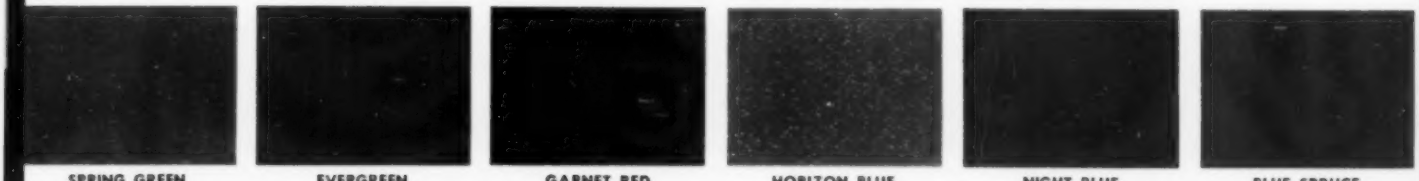


SPRING GREEN | EVERGREEN | GARNET RED | HORIZON BLUE | NIGHT BLUE | BLUE SPRUCE

EBONY | SLATE GRAY | DRIFTWOOD GRAY | GLACIER WHITE | SANDSTONE TAN | SUMAC RED

Design of Edsel Ford High School features distinctive, economical

Concrete Shell Roofs

The first concrete shell roofs constructed in Michigan were used in the Edsel Ford High School in Dearborn. Four shell units were built: two over the boys' gym, one over the girls' gym, and a fourth over an intermediate building housing the swimming pool and locker rooms. All four roofs have spans of 100 ft. and identical arches of 121-ft. radius and a rise of 13 ft.

Concrete shell roof construction was selected because (1) it provided unobstructed interiors, (2) it was adaptable to the architectural design and (3) it was economical to build.

Concrete shell roof construction is gaining rapidly in popularity with architects and engineers for buildings requiring large unobstructed floor areas. Roofs with spans up to 300 ft. and more can be built without interior columns. They are ideal for auditoriums, exhibit halls, hangars, train sheds, repair shops and warehouses.

Concrete shell roofs are economical to build, need little or no maintenance, have long life and low insurance rates. They are true *low-annual-cost* construction. Write for free illustrated literature. Distributed only in the United States and Canada.

Large photo shows completed structure. Girls' gym is in foreground, boys' gym in rear. Depressed roof between gyms covers swimming pool and locker rooms. Small photo above shows clean, unobstructed interior in boys' gym. Photo below shows how shell roof design was repeated in roof over walk connecting gymnasium wing with auditorium. Architect, Eberle M. Smith Associates, Inc.; engineer, Alfred Zweig; contractor, O. W. Burke Construction Co. All are from Detroit.

PORTLAND CEMENT ASSOCIATION

Dept. 6-25, 33 West Grand Avenue, Chicago 10, Ill.

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Nine torture tests were devised to record and demonstrate the unusual strength of Russwin *Unilocs*. These tests include: (1) torque applied to the outside knob when the lock is locked; (2) a pull test to check the strength of knob fastenings; (3) the application of a load on both knobs when the lock is mounted; (4) a load applied to the latch radius in the direction that the strike would press on a latch-bound door.

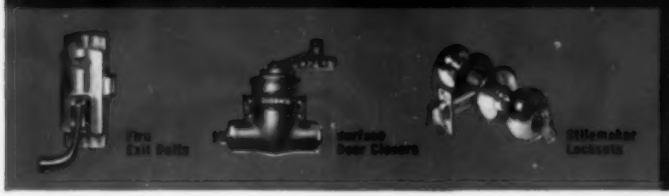
TORTURE TESTS DEMONSTRATE THE STAMINA OF

The results of these and five other equally as severe tests are available through your Russwin specialist. He'll be glad to give you the details.

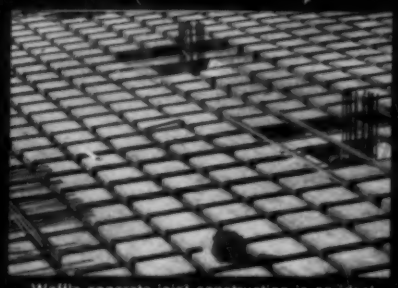
In the design and construction of UNILOCS, every effort is made to meet your qualifications for an outstanding lock — outstanding not only in design, operation, and ease of installation, but also in extra service life. Torture tests demonstrate their stamina. Russell & Erwin Division, The American Hardware Corporation, New Britain, Connecticut.

A SYMPHONY IN LOCKMAKING

THE RUSSWIN UNILOC



Simple open wood centering supports Ceco-Meyer Flange-Type Steelforms for waffle construction used in The Center, Omaha. Here a worker is readying steelforms to fill out a panel.



Waffle concrete joist construction is an ideal solution for buildings with wide column spacings and light floor loads. Savings are made in the formwork and in the elimination of ineffective concrete.

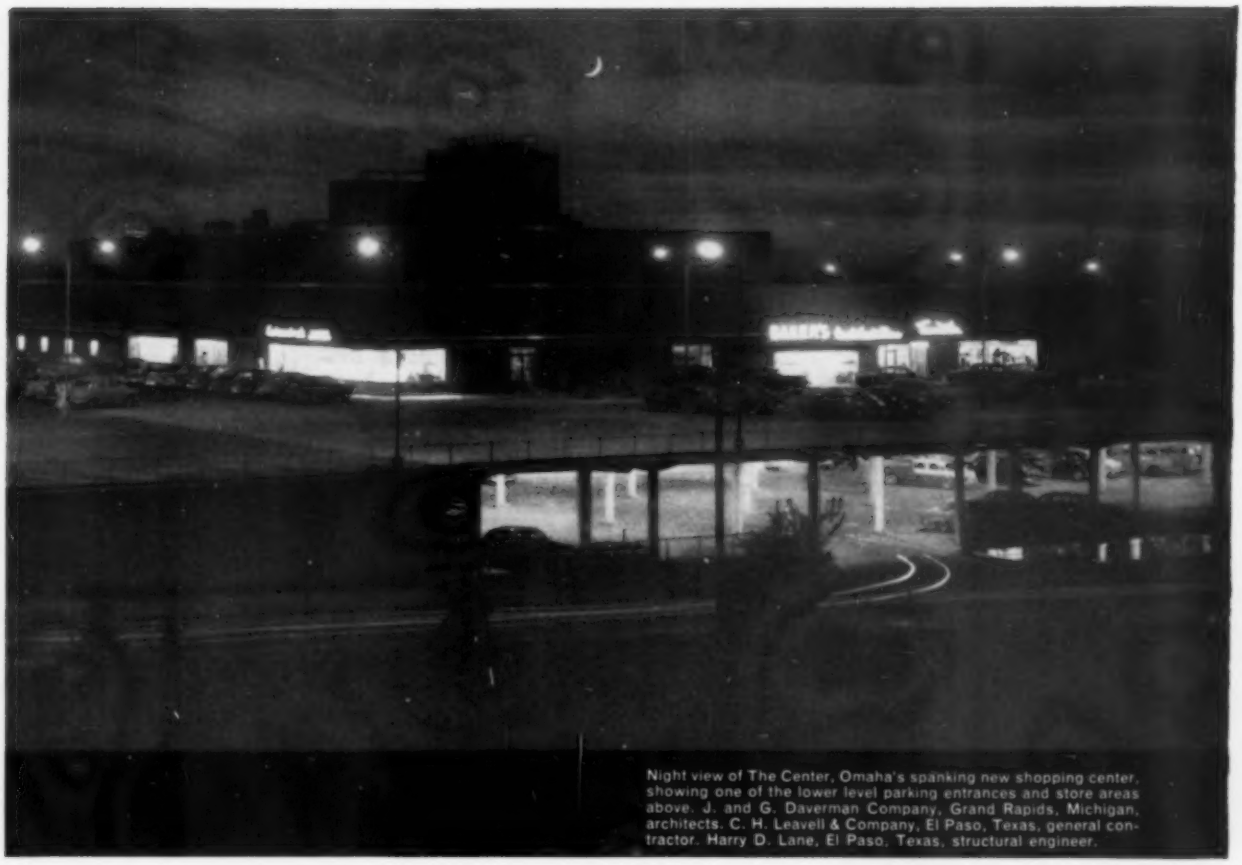
There's nothing better than reinforced concrete for permanence. With Ceco's Waffle Construction you can have permanence—plus longer spans and higher beam-free ceilings without increasing over-all building height.

Ceco Open-Web Steel Joists used as roof purlins, as illustrated here, comprise the lightest of all standard roof framing, allowing long spans and light beams, columns and footings. They can be erected summer or winter—and are non-combustible and non-shrinking.

WAFFLE-TYPE PROVIDES

CECO STEEL

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE



Night view of The Center, Omaha's spanking new shopping center, showing one of the lower level parking entrances and store areas above. J. and G. Daverman Company, Grand Rapids, Michigan, architects. C. H. Leavell & Company, El Paso, Texas, general contractor. Harry D. Lane, El Paso, Texas, structural engineer.

CONCRETE JOIST CONSTRUCTION "WIDE OPEN SPACES" . . . CUTS COSTS 7%

CECO ENGINEERING TAKES "LAZY" CONCRETE OUT OF LONG SPANS . . . Wide open spaces . . . that's the need in shopping centers . . . where the fewer the columns the more freely the merchandise moves. So in designing The Center—Omaha's newest shopping community—the architects J. and G. Daverman Company used Ceco-Meyer Steelform "Waffle" Construction to obtain long, rigid floor spans at reasonable cost. Comparison with other framing methods showed dollar savings of 7%. Non-working "lazy" concrete was eliminated by the open waffle areas —yet this two-way joist system created maximum stiffness. Further savings were made by using Ceco Open-Web Steel Joists for the roof and mezzanine. Ceco also supplied Steel Reinforcing Bars and Welded Wire Fabric, meeting exacting delivery schedules. Here's an example of how Ceco Coordinated-Engineering assures the best structure while saving money and speeding construction. Next time call Ceco for planning help.

CECO STEEL PRODUCTS CORPORATION
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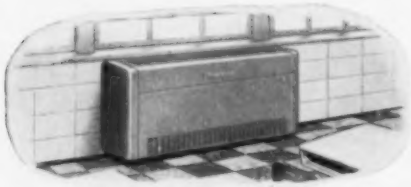
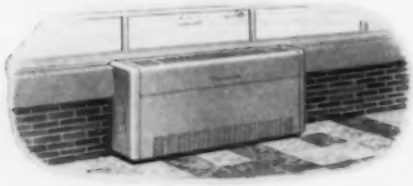
Windows, Screens and Doors • Ceco-Meyer Steelforms • Concrete Reinforcing • Steel Joists • Metal Roof Deck • Metal Lath

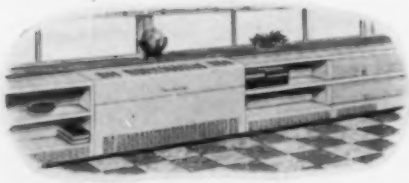
Increases the yield of good teaching....



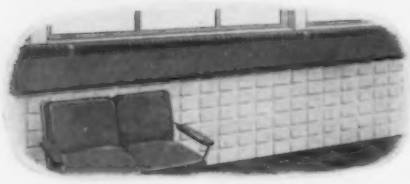
THE NESBITT SYNCRETIZER, basic performer in a system of heating and ventilating now enjoyed in more classrooms than any other unit. Fully explained in Publication 100.



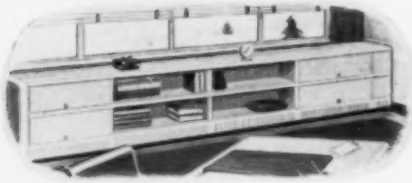
SYNCRETIZER WITH WIND-O-LINE RADIATION, meets two extreme needs: classroom heating and ventilating and cold surface protection. Reduces overall costs when installed as the Series Hot Water Wind-o-line System. Publications 101, 104.



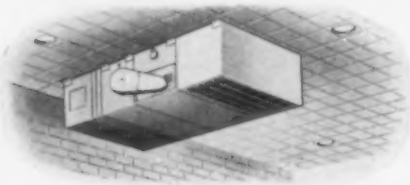
THE NESBITT PACKAGE—the Syncretizer and the Wind-o-line Radiation are integrated with Nesbitt Storage Cabinets for a desirable combination of comfort, beauty, and utility. All the components are described in Publication 101.



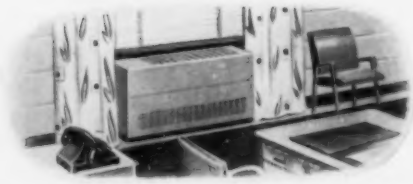
NESBITT SILL-LINE RADIATION is today's most beautiful form of perimeter heating with design, capacity and performance well suited to corridors and administrative areas. Publication 102.



SILL-LINE WITH STORAGE CABINETS—a low-cost integration of beauty, utility, and perimeter radiation for rooms where controlled ventilation is deemed unnecessary. Publication 102S.



THE NESBITT THERMOVENT is the recommended means of heating and ventilating auditoriums and large assembly areas where quietness is essential. Only Nesbitt Thermovents have the exclusive sound absorbing plenum. Publication 270.



NESBITT CABINET HEATERS—deluxe units designed and constructed for blast heating in entrance vestibules and lobbies. May be installed fully- or semi-recessed. Publication 403.

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Three dimensions of America's schools are housing, equipment, and instruction. By wise investment, some of your equipment dollars can add a fourth dimension: *the most conducive learning environment.* The dollars so spent help to safeguard your total investment and to assure the maximum yield from the learning process.

Since 1917 Nesbitt has led the field in the creation of heating and ventilating equipment that has raised ever new and higher standards of classroom comfort.

Here's the newest idea for your bathrooms

Hall-Mack's new electric Warm-Dri towel rack strikes a bright note in bathroom comfort and convenience...with special appeal to the "lady of the house". It's a convenient and very useful fixture that keeps towels, lingerie, nylons—other items—dry and pleasantly warm. Warm-Dri heats quickly and safely, it can't burn or scorch the most delicate of fabrics. A wonderful luxury for new or remodeled bathrooms. Hall-Mack's Warm-Dri towel rack is an item that can be incorporated in *all* your bathroom plans—and recommended with confidence.

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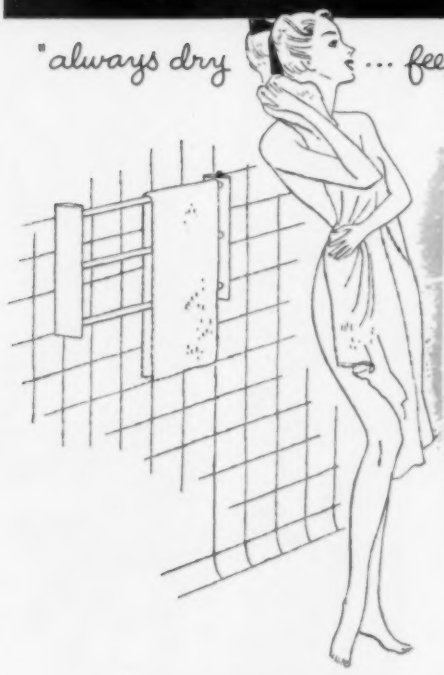
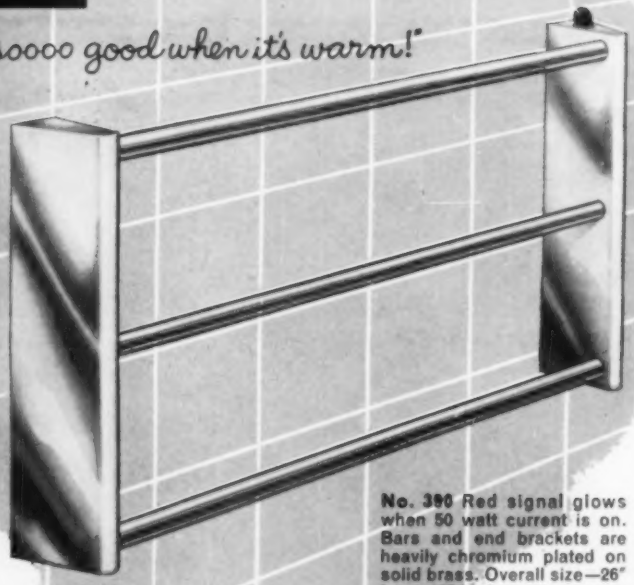
towel rack

"always dry ... feels soooo good when it's warm!"





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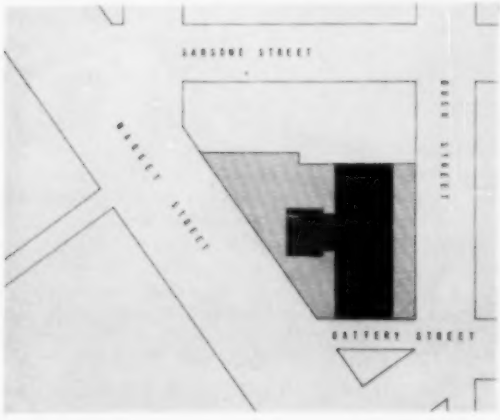
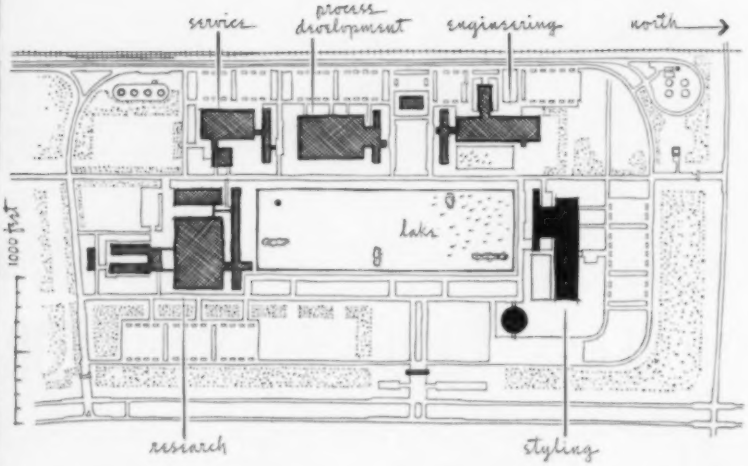
PA-6

GLASS TOWER PLANNED FOR SAN FRANCISCO



SAN FRANCISCO, CALIF., May 18—Crown Zellerbach, paper-manufacturing corporation, today announced plans for its new 22-floor headquarters to be erected in the downtown area here *(plan, left)*. Designed to accommodate 2000 people, Crown Zellerbach plans to occupy 40% of the structure's 230,000 sq ft by mid-1958. Plan of steel framing provides open floor space free of all columns, other obstructions; services will be housed in tower adjoining main building *(see sketch)*. Movable partitions will enclose modular space units, each having its own light, air conditioning, telephones, and power. Landscaped gardens, below street level, surround building. An underground garage will contain more than 200 cars. Hertzka & Knowles and Skidmore, Owings & Merrill, Associated Architects, developed the plans.

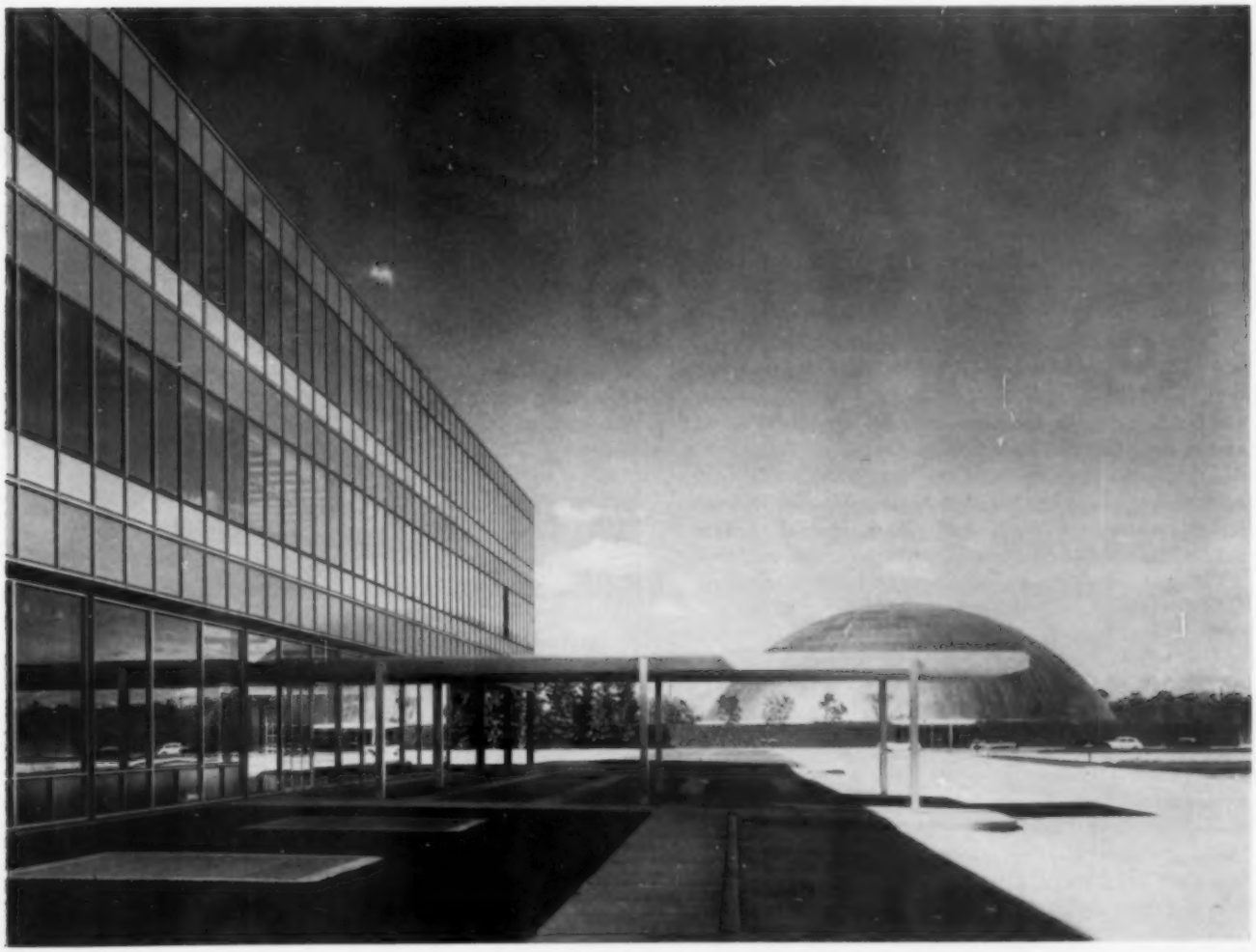
GM TECHNICAL CENTER DEDICATED



DETROIT, MICH., May 16—With completion of the Styling Administration Building and domed Auditorium *(photos acrosspage* and *stair detail above)* General Motors has put finishing touches to its $150-millions Technical Center *(top of page)*. Five thousand leaders of science and industry attended formal dedication ceremonies held today. The Technical Center occupies 320 acres in Warren, Michigan. Its 25 buildings—housing the Research, Engineering, Process Development, Styling, and Service sections—are adeptly disposed around a 22-acre artificial lake. Distinguished architecture, closely related works of art, lavish fountains, and landscaping provide an inspiring and tranquil atmosphere for the 4000 designers, technicians, and office workers employed at the Center. This may deservedly rate as the prototype of the secluded industrial environment of the future. Architectural and site planning—ranging from gatehouses, laboratories, office buildings, and shops, to the total scheme—is the accomplishment of Eero Saarinen & Associates, Architects, Bloomfield Hills, and Smith, Hinchman & Grylls, Incorporated, Architects-Engineers, Detroit.

Styling Section of General Motor's Technical Center consists of Administration Building and domed Auditorium (below). *Luminous ceiling of 88-ft Auditorium* (right) *provides shadowless lighting for technicians of research staff. Automotive-design studio* (right) *receives natural light through glass curtain walls, as well as artificial light supplying 95 ft-c intensity at desk height.*

Photos: GM Photographic



News Bulletins

• New AIA officers elected at last month's Convention in Los Angeles are: President, Leon Chatelain, Jr.; First Vice-President, John Noble Richards; Second Vice-President, Philip Will, Jr.; Secretary, Edward L. Wilson; Treasurer, Raymond S. Kastendieck.

• Additional Convention news: Resolution urging more competitions for design of public works, whenever feasible, was passed. . . . Resolution recommending change in voting methods for national officers has been referred to Institute's Board of Directors for further study. . . . Seminar sessions covered wide range of subjects, from integration of the arts to office-practice and specifications problems.

• AIA Honorary Memberships—for distinguished service to architecture and allied professions—were awarded at Convention to: Thomas S. Holden, Vice-Chairman of F. W. Dodge Corporation; Brig. Gen. Thomas North, Secretary of American Battle Monuments Commission; Leon Zach, President of American Society of Landscape Architects; and John F. Lewis, Jr., President of Pennsylvania Academy of Fine Arts. . . . Honorary Fellowships were presented to Jean Maunoury, Architect for Chartres Cathedral; Gustavo Wallis, Past President of IX Pan American Congress; Ernesto N. Rogers, Italian Architect and Editor; and Edmundo G. Lucero, President of Philippine Institute of Architects.

• Competition for design of Home for the Aged (including infirmary and rehabilitation facilities) has been announced by National Committee on the Aging, National Social Welfare Assembly. Competition closes October 1, 1956; prizes total $10,000. For details write: Edward H. Noakes, White, Noakes & Neubauer, 1145 19th St., N. W., Washington 6, D. C., Architectural Consultant for competition.

• Birch Burdette Long Memorial Prize Competition, an annual event at The Architectural League of New York, took place this past month. First Prize, in competition for architectural renderings, went to George Cooper Rudolph for three drawings of 30-story Chase Manhattan Bank Building (see May P/A News Survey). Honorable mentions: A. Jiminez, for rendering of Canada House; Pierre Lutz, for drawing of P.S. 175, Manhattan; and Robert E. Schwartz, for drawing of a proposed school.

• Five top winners in The School Executive's Fifth Annual Competition for better school design are: Warren H. Ashley, for Wilbert Snow Elementary School, Middletown, Conn.; Caudill-Rowland-Scott with Bruce & Russell, for J. R. Moore Junior High School, Tyler, Tex.; Hellmuth, Obata & Kassabaum, Inc., for Bristol Primary School, Webster Groves, Mo.; Vincent G. Kling, for Kissam Lane School, Sea Cliff, N. Y.; and Jay C. Van Nuys & Associates, for Hanover Park Regional High School, East Hanover Township, N. J.

• American Standards Association recently honored three men "who have contributed most toward the advancement of modular measure as a means of benefiting the national economy." Trophies were presented to: Leonard G. Haeger, Technical Director for Levitt & Sons, Inc.; Fred M. Hauserman, President of The E. F. Hauserman Company; and H. B. Zackrison, Chief, Engineering Department, U. S. Army Corps of Engineers. . . . Modular measure received a big boost last month when Associated General Contractors of America announced its official endorsement.

• Lewis Mumford, Author and Professor of City Planning, University of Pennsylvania, has been awarded a Fellowship for his "studies of the development of cities as an aspect of modern civilization" by John Simon Guggenheim Memorial Foundation.

• Paul Schweikher has been appointed Professional Advisor for competition to design $1-million Fine Arts Center for City of Memphis, Tenn. Philip C. Johnson, Paul Rudolph, and Thomas H. Creighton will judge entries in competition open to local architects only.

Gottscho-Schleisner

• New York City Coliseum (above)—world's largest exhibition hall—was formally opened to public on April 28. Twenty-two major trade shows and public expositions have already been scheduled for 1956 in the four-floor, air-conditioned exhibition space. Entire Columbus-Circle project, erected by Triborough Bridge and Tunnel Authority at cost of $35 millions, also includes 20-story office tower and basement-level parking for 850 cars. Architects for the Coliseum were Leon and Lionel Levy; John B. Peterkin, Aymar Embury, 2nd, and Eggers & Higgins, Consulting Architects. Dr. Jacob Feld was Structural Engineer; Guy B. Panero served as Mechanical Engineer.

Bill Engdahl—Hedrich-Blessing

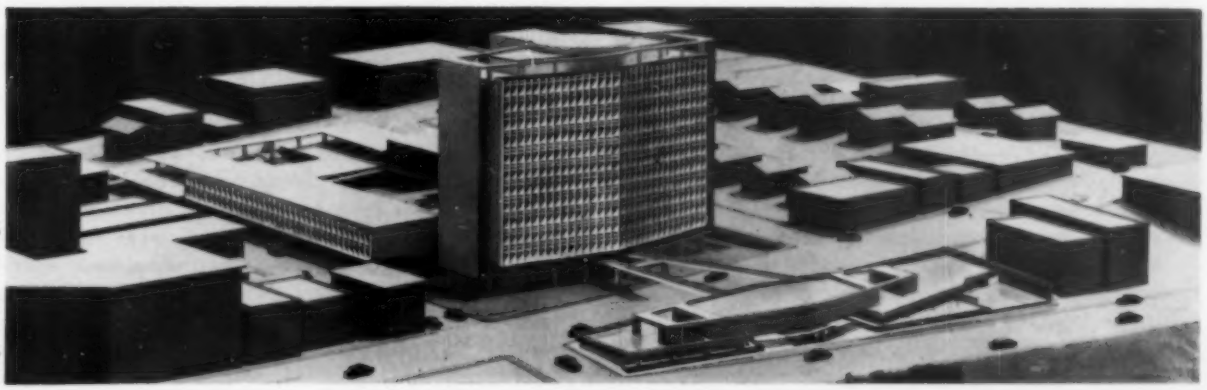
• Newest addition to Illinois Institute of Technology's Chicago campus—S. R. Crown Hall (above)—has been named for co-founder of Materials Service Corporation, producer of prime building materials. Designed by Ludwig Mies van der Rohe to house Institute of Design and Departments of Architecture and City & Regional Planning, welded-steel and plate-glass structure features column-free interior space. Drafting areas flank center core containing administrative offices, library, and exhibition hall; studios, lecture rooms, storage, and mechanical facilities for air-conditioned building are located in basement.

• Los Angeles Headquarters Center for Union Oil Company of California—designed by Architects Pereira & Luckman—will cost more than $16 millions when completed. Interior of diamond-shaped Main Building (center, below) will be protected from east-west orientation by vertical and horizontal aluminum fins; Fifth Street Building (left) and Maryland Building will provide additional office space; and Beaudry Building (foreground) will house auditorium and cafeteria facilities. Underground parking garage will accommodate 1350 cars.

• Winners of competition for new design and construction ideas for aluminum curtain walls—sponsored by National Association of Metal Manufacturers and Aluminum Company of America—were announced last month. First award of $10,000 went to Alfred Clauss, partner in firm of Bellante & Clauss, Philadelphia; second prize—George W. Qualls and William E. Cox, both of Philadelphia; and third prize—Robert P. Darlington, Champaign, Ill.

• Internationally known designers, architects, and artists will convene at Sixth Annual Design Conference at Aspen, Colo., June 23-July 1, to discuss "Ideas on the Future of Man and Design."

• 19th Ceramic National—exhibition open to architects, sculptors, enamelists, and potters—will be held at Syracuse Museum of Fine Arts, Nov. 4-Dec. 2. Prizes totaling $3200 are offered, with special awards for ceramic sculpture and for ceramic sculpture used as integral part of an architectural plan; entries are due Aug. 30-Sept. 8 in regional centers. For information write: 19th Ceramic National, Syracuse Museum of Fine Arts, Syracuse 3, N. Y.



Graphic Films Corp.

Washington Report

by Frederick Gutheim

The most diverting item of architectural interest here in recent weeks was certainly the Women's Housing Congress. At first blush, nothing could have appeared less promising. The idea sprang straight from the brow of Zeus, so to speak—right from Housing and Home Finance Agency Administrator Albert M. Cole, himself. It was executed by Miss Annabelle Heath, who recently moved from relative obscurity of a confidential assistant to Cole into the position of a full-fledged Assistant Administrator, but who is without much specific housing experience. From here on out, she is clearly an influence to be reckoned with.

The experts in HHFA, and especially in FHA, clearly loathed the idea of the conference. But what has emerged shows once again that the expert is often wrong, particularly in his own field; and it has shown that when it comes to their own specialty—that of political leadership—Cole and Miss Heath do not need instruction from anyone. From the first announcement—through the amazing press they got on the release of over 2000 letters received from women in all parts of the country who had been asked to express their views on the design of builders' housing—to the triumphant conclusion, the meeting proceeded with authority. The final assessment is still being made, but changes in FHA's minimum-property regulations and a substantial response from building industry groups is a sure bet. The first positive industry reaction was from the Plumbing Fixture Manufacturers Association, who called a special press conference, announced a bathroom survey, issued an impressive 26-page press kit—but managed to show their total lack of understanding of what women mean when they say you can't bathe a baby in the modern bathroom. This remark was dropped by Mrs. W. J. Moore of Pelham Manor, New York, who added that from her housewife's point of view the bathroom was in pretty much the same state it was "when my ancestors were beating clothes on the rocks." She added that "nobody ever built a towel rack that you could dry a towel on." The Congress was spiced with comments of substantially this degree of independent insight. And a dozen FHA architects, each assigned to one of the round tables into which the meeting was divided, were reeling at the end (one actually collapsed). The final reports bear a strong resemblance to what the household press has been printing in recent years (and what the architectural press printed a decade before). But this kind of feedback is somewhat more powerful.

Financial News

by William Hurd Hillyer

Summer this year arrives with less than usual opulence, for money is tight and the construction outlook is uncertain. Contrary winds—inflationary and deflationary—tug at the economic fabric. The Federal Reserve System, evidently fearing inflation rather than recession, has raised the price paid for money by the banks to a 23-year record high of 2¾-3%. As a result the System has come in for criticism from many business sections. "Trying to bring on a depression!" is the accusing cry. In point of fact, say well informed bankers, the situation is simpler than at first appears.

Paced by residential housing, the so-called "boom" has spawned expansion programs of unprecedented size in a great variety of industries. Since the first of the year, these programs have required more and faster financing than current earnings or security flotations have permitted. In addition, the earnings themselves drew Government fire in the shape of super-seasonal tax demands. Industry and business consequently borrowed from the banks some $5½ billions, a total 24% higher than last year's and now rising $30 millions weekly. The banks, having exhausted their own reserves, borrowed, during the period, considerably more than $1 billion from the Federal Reserve System, which in turn raised the rates to discourage further borrowing and head off inflation.

This picture, though thought-provoking, need not cause alarm. It is predicated upon tremendous production and proper shelter for homeseekers. What does breed concern is the rocketing of nonrealty consumer debt now exceeding $34.3 billions, of which about $27 billions is repayable monthly. This ties up money and credit that should go into houses. It is out of line with the production curve, whereof the upward trend has leveled off. As one large Southern bank told its stockholders: "Proper respect for debt cannot be expressed by a formula. It is observed by thinking people who are willing to forego something today for a more secure tomorrow." In like spirit is a leading Wisconsin bank's approval of the Federal Reserve Board's efforts to control inflationary tendencies. On the other hand, bankers of equally high standing declare that consumer credit is "not excessive" in proportion to personal income.

• "How to finance expansion without inflation" was the hefty assignment of a distinguished five-panel discussion last month at the Pennsylvania Bankers Association annual convention. No definite formula was forthcoming, but Dr. Lester V. Chandler, a director of the Federal Reserve Bank of Philadelphia, made clear that in the months ahead we cannot possibly increase production "output" at anywhere near the 1955 rate. He also stated that we cannot achieve the $40-billions, 11% increase of the past 18 months, no

• Civil Aeronautics Administrator Charles J. Lowen has recently indicated some changes in airport terminal buildings that will be needed with the advent of jet transports. His recent talk to the Airport Operators Council was salted with references to "architects with the touch of genius" and the reponsibilities of airlines and others in the terminal planning picture. Two problems identified were the larger peak loads to be handled when jets unload 150 passengers at a ticket or baggage counter; and the ground distances that separate many airport activities (in Chicago it's a half-mile walk from United to Capital's counter).

• The death of F. Stuart Fitzpatrick has removed from Washington construction world one of its most influential figures. A self-effacing man, his achievement was welding together the many diverse elements in the building industry, and directing their joint efforts to projects of industrywide benefit. Public works, highways, housing, building industry stabilization, labor, controls—these were some of the areas in which his influence was most widely felt. He represented an enlightened voice pleading for city planning and zoning. Few of his accomplishments were realized through manipulating the direct influence of the U. S. Chamber of Commerce, of whose Construction and Civic Development Department he was manager. More were attained through the Construction Industry Advisory Council, which served as a sounding board, and is probably to be credited with the establishment of the Building Research Advisory Board. But when the hatchet was really swung, it tended to be in the still more amorphous luncheon and round-table group to which he attracted the most informed and powerful figures in Washington who concerned themselves with building. These trade association executives, many of them as passionately anonymous as Fitzpatrick himself, merged their political power to influence appointments, appropriations, regulations, reorganizations, legislation, and administrative decisions. As in any local chamber of commerce, this pooling of influence was accomplished only by blunting the keen edge of self-interest and finding broader and industrywide objectives. There were times when, as in the termination of building industry controls after the war, a narrow and positive objective was sought; but longer-range programs of research, building industry stabilization, urban redevelopment and planning were the more typical outcome. At the time of his death, one was startled to reflect upon how many of the gains that building has made derived from the influence and leadership of a single man; and dismayed to realize the magnitude of the task of continuing his effort.

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matter how rapidly demand may rise. Furthermore, it was maintained, increases in real output can come only slowly and at rising cost. Contrast is obvious between this difficult accretion and the effortless ground swell of short-term debt.

• Distinction is drawn between "construction" and non-construction debt by such keen analysts as the Federal Reserve Bank of Chicago. Though residential construction was at a new record high last year (in 1947-49 dollar and physical volume) it was well behind the 1920's in relation to total national output, that institution reveals. The gap is still widening in 1956. As for mortgage debt, its $13-billions rise in 1955 was partly counterbalanced by the little-noted $15 billions of repayments and refinancing. Meanwhile, moneymen are impressed by a Morgan suggestion at the recent Eastern Mortgage Conference that a fiduciary corporation be organized to buy VA and FHA loans, raising the cash through sale of its own debentures to pension and trust funds as well as private investors. In any event, such informed sources as the Federal Reserve Bank of Chicago voice the belief that the large-scale demand for long-term credit may beget higher interest rates on mortgages in the near future.

• The Chicago Federal Reserve reveals a major "soft spot" in our over-rapidly built present economy. Many communities, comprising at least 70 labor market areas, are in the grip of "chronic unemployment." The high-efficiency changes that have meant higher living standards for most Americans have led to distress in isolated sectors, particularly in the Middle Atlantic and Southeastern states. Manifestly, residential and other construction will falter in these communities until normal conditions are restored. Countrywide, New York's largest national bank sees little reason to doubt the firmness of expansion plans, but local readjustments will have to be made.

• Alleged unwillingness of lenders to finance "advanced designs" in homes which project the architect's philosophies of creating the new way of life is reported by American Bankers Association's official publication. When this feeling was voiced at a recent round table sponsored by associations, respectively, of architects and homebuilders, the lenders invoked the well known principle that good design and good construction are integral in a sound loan. Echo retorted with the question implied editorially (P.S., April 1956 P/A)—who shall decide what is and is not "good" design?

New England banking circles note a difference of opinion among residential buyers, themselves, as to what constitutes practical worth. Some want more rooms; some, more equipment. All are discriminating, with the accent on quality. To harmonize sound design with these demands, the architect's services will be increasingly sought.

• Architects and bankers have common interest in a new Federally sponsored plan to help finance college housing, which will enable colleges to proceed at once with construction, pending disposal of long-time bonds.

20 YEARS OF ARCHITECTURAL PHOTOGRAPHY REVIEWED

The architectural photography of Samuel H. Gottscho & William H. Schleisner, New York, will be on view at the Museum of the City of New York, from June 5th through the summer, to commemorate the 20th anniversary of their combined photographic activities. Photos on display will include St. Paul's Chapel, the New York Stock Exchange, and the United Nations (above).

a new p/a feature:

PROGRESSIVE ARCHITECTURE IN AMERICA

historic contributions to contemporary architecture

A NEW AND UNIQUE FEATURE for our Readers will begin in SEPTEMBER 1956 P/A when we present the first of a series of historic structures in America that have made significant contributions to the development of our architecture. This feature will be titled PROGRESSIVE ARCHITECTURE IN AMERICA. The illustrations, with accompanying descriptions and notes on the importance of each example, will be prepared by Ada Louise Huxtable, architectural historian and experienced researcher, with the advice and assistance of The Society of Architectural Historians. The object is to offer our Readers authoritative documentation of those buildings that exemplify achievements to date in structural design, in utilization of new materials, in planning principles, in functional uses—and in visual results.

"The story of PROGRESSIVE ARCHITECTURE IN AMERICA *is not a story of isolated monuments," explains Mrs. Huxtable. "It is not concerned with the 'first,' or the 'greatest,' or the 'latest' example of structure or style. Some of these landmarks are familiar: a small group of celebrated buildings of the past has been well publicized as signposts to the future. Others, less well known, are equally indispensable to a coherent account of our architectural advance. At best, Progress is an ambiguous word. Progress in architecture suggests technological and structural advance, new types of buildings to meet new socio-economic needs, new esthetic forms to express changing philosophies and ideals. In American architecture, the word Progress has a special character and meaning. The growth of the United States as a nation reflects a period of transition unparalleled in the history of man, unprecedented in its influence on his environment and way of life.* PROGRESSIVE ARCHITECTURE IN AMERICA *is not a series to record accidental phenomena, but to document a tradition that began with the ingenious and practical work of the Colonial builders. It has quite a lot to do with the renowned Yankee belief that nothing is unattainable—that the world can always be made a little better place to live in."*

It is in just this spirit that Ada Louise Huxtable has been assembling and documenting the examples, and we hope that in this spirit P/A Readers will welcome the new series when the first example appears in September. We are making this announcement well in advance of the starting date in the belief that many P/A Readers will wish to join SAH members in calling attention to buildings of their own localities which merit consideration for inclusion in this continuing documentation of progressive experiments in design and structure.

THE EDITORS

Pontiac City Hall, Pontiac, Michigan
Architect: Leo J. Heenan, A. I. A.
General Contractor: J. A. Fredman, Inc.
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The New House-to-Site Transition

Julius Shulman

a p/a study

introduction

No contemporary principle of house planning has become more shopworn than what is variously and vaguely referred to as the indoor/outdoor relationship: bringing the outdoors in, or extending the indoors out. Depending on what magazine you read, this highly respectable concept has degenerated to the point where it may mean nothing more than a "picture window" or a few rubber plants arranged in a corner of a living room.

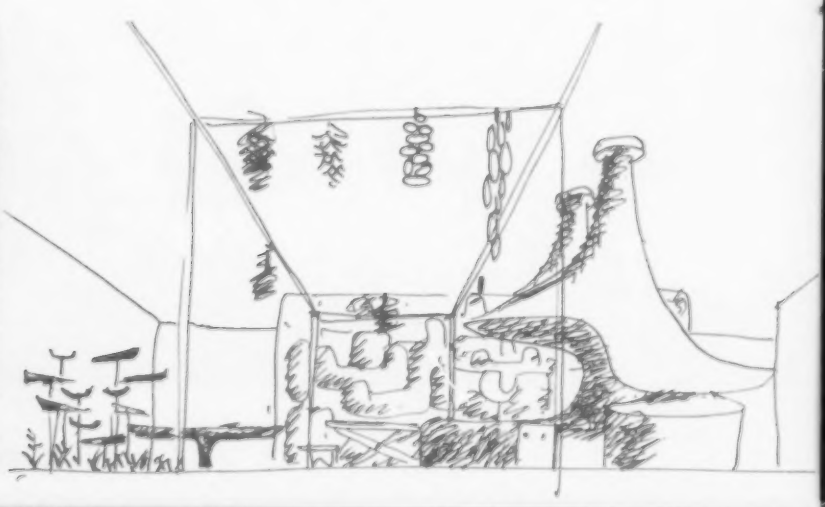
Many have been—and are still—intrigued with the use of a window wall, the lawn, or the planting bed immediately outside the building line. Not a few have contrived to continue exterior planting areas or pools right into the rooms of a house. And here and there, magazine readers have come across an outcropping of rock in the middle of a room, as a result of the architect's attempt to erase the line between indoors and outdoors. All of these things, when done by sensitive designers—not merely as conversation pieces or perhaps a *tour de force*—have produced agreeable new dimensions for the living environment.

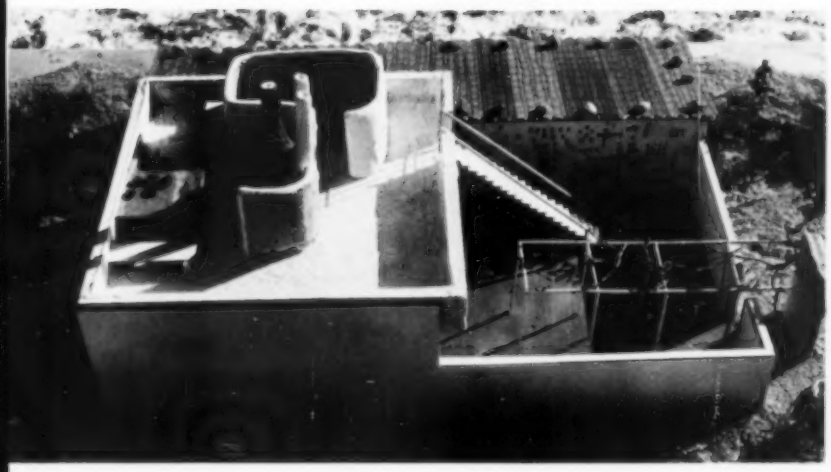
Recent efforts, however—and the distinguished houses on the following pages are all important instances—indicate that many architects now believe the immediate juxtaposition of natural and architectural elements to be too abrupt or disquieting. And they have concerned themselves with providing interim zones, or areas of transition. These, while still joining indoor/outdoor elements, do so gradually, as a succession of visual and environmental experiences.

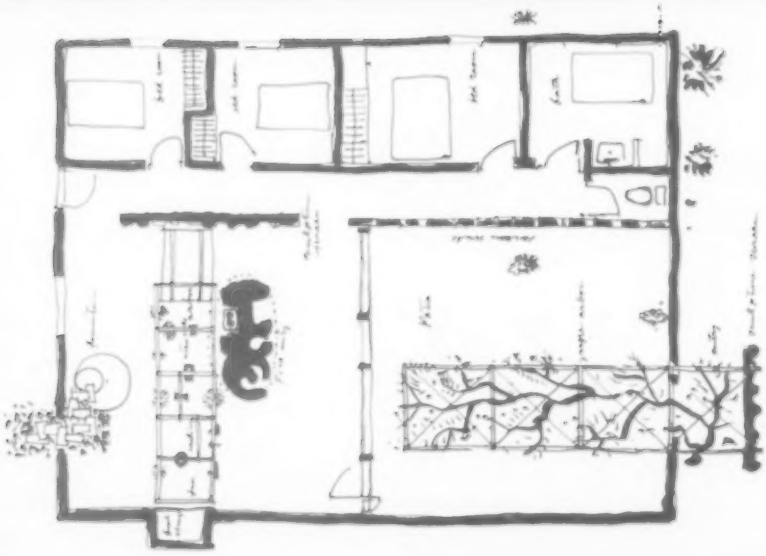
One will find houses where screened porches or terraces are the intermediate steps from the armchair to the flower bed; where care in site, planting, and fencing arrangements define the limits of outdoor space to be seen and used; where interior spaces are extended outward through the time-honored device of usable, covered porches; where a very small house is immeasurably enlarged by painstaking study of site/house transition; and where the condition of a plunging slope with a view beyond has been exploited and enhanced by a visual progression from mezzanine, to living-room windowed wall, to a tree-top, wind-sheltered, cantilevered balcony.

It seems to us that the late Gordon Drake (one of whose few unpublished houses is shown) admirably summed up this new approach to the indoor/outdoor desideratum. In designing the house presented in this issue, his stated wish was to achieve an easy transition "from open sky to complete enclosure"; and "to give one a choice" of degrees of enclosure.

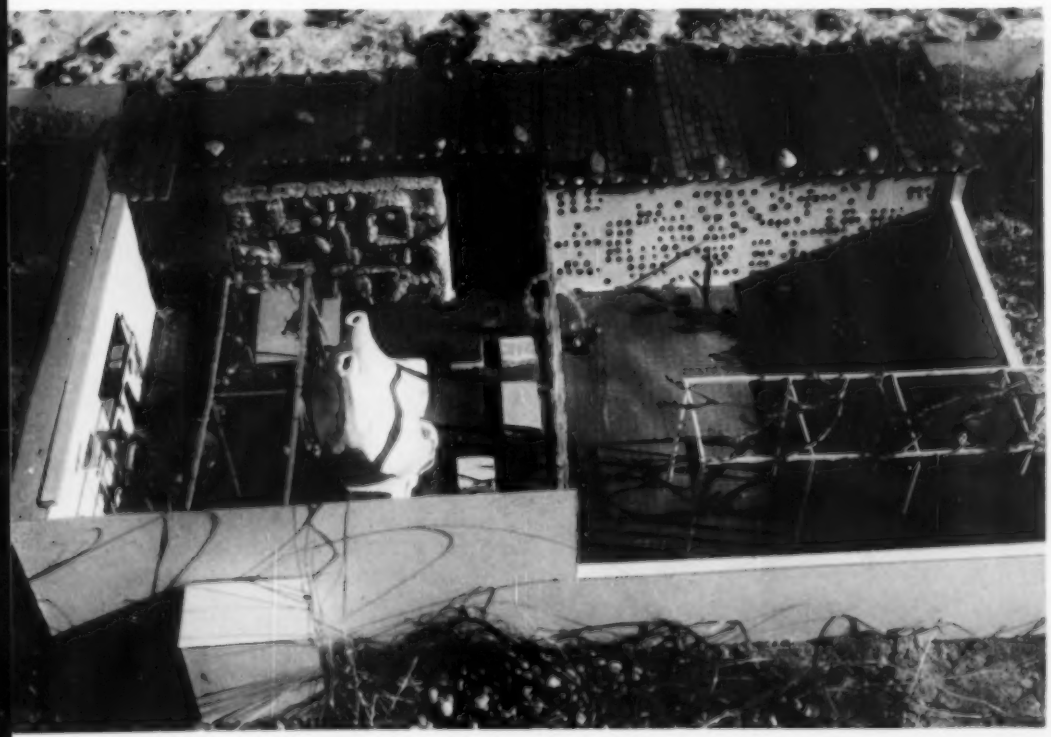
This, then, is the theme of the issue —which, incidentally, through its variety, re-emphasizes the testing-ground-research-laboratory aspect of residential design that we explored in detail in March 1953 P/A. All, one may assume, agree that it is desirable for house and site to be wedded. This issue will have served its purpose if it inspires designers to find ways and means of making this union as happy as possible.



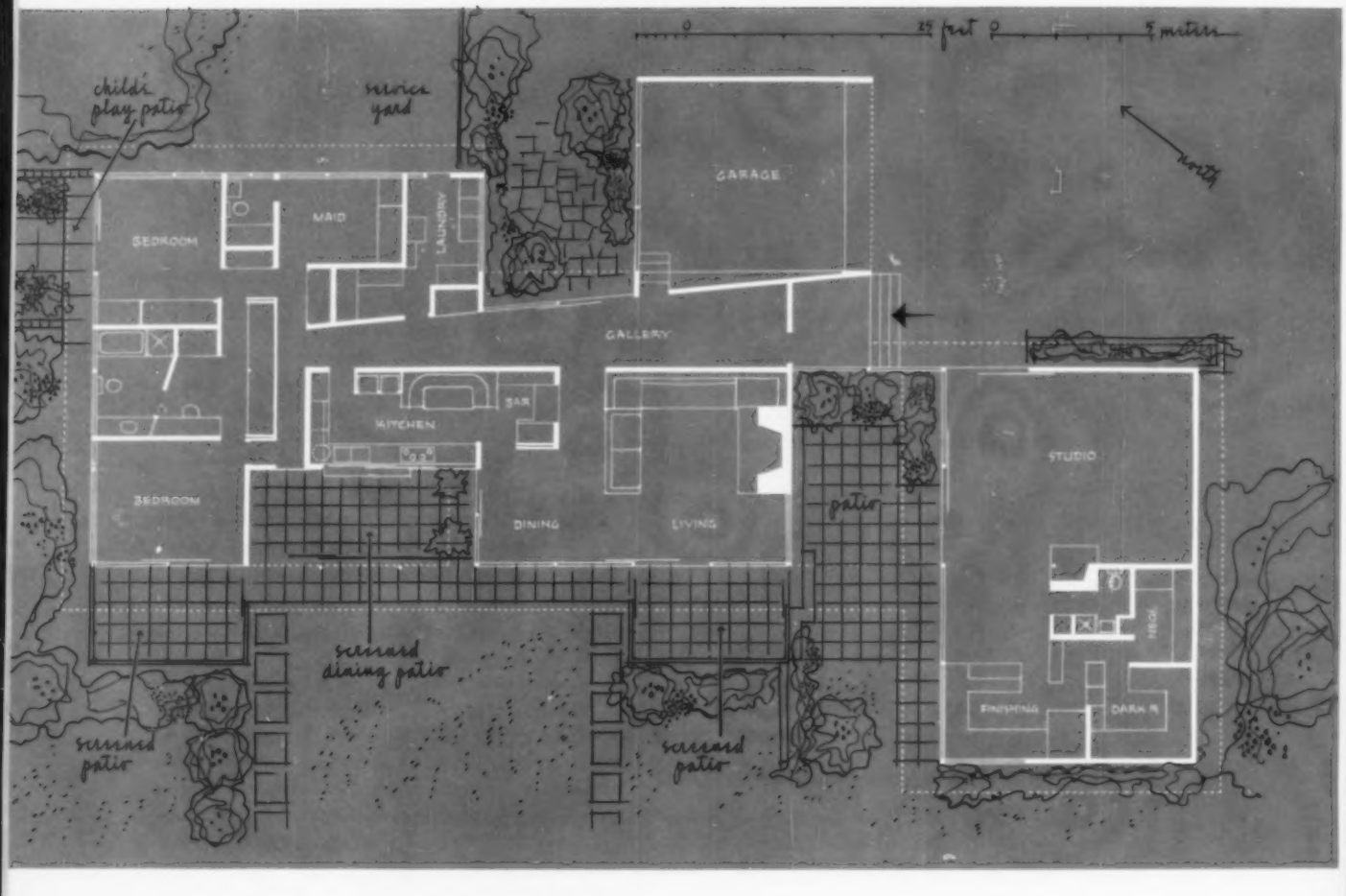




Sculptor Costantino Nivola's solution for the house-to-site transition is suggested by these sketches and model photos of his own summer house, to be built in East Hampton, Long Island. The walled patio provides intimate privacy and also serves as foil to the dominant element of the interior, the sculptured fireplace. The limited visual perspectives within this enclosed area—and in the even more closely confined spaces of the sleeping cubicles—focus attention on sculptures and other objects of interest. In contrast, an easily accessible roof terrace offers practically limitless vistas of the country outside. A grape arbor and fountain are links connecting this simple, rectangular, almost introverted structure to the outer landscape.



Los Angeles, California. *Raphael S. Soriano, Architect; Eckbo, Royston & Williams, Landscape Architects; William Porush, Structural Engineer; Merrill Nibley, General Contractor.*
Photos: Julius Shulman



screened patios provide the link

Particularly pertinent to a discussion of new solutions for the problem of integrating a house with its site by means if intermediate areas that are not wholly indoors nor yet fully *en plein air*, this house is exceptional in several other respects as well. Not only was it designed by one of the vanguard of progressive residential architects and landscaped by a leading firm of landscape architects, but also it is the home and studio of Julius Shulman, Los Angeles photographer whose skilful interpretations of architecture have long been admired.

Architect and client worked in closest collaboration in developing the design. "The clients helped contribute as much to the performance of the house as the architect," says Soriano. "This is the way it should be. This is the way to architecture." Shulman comments: "Our site, extending in an east to westerly direction, offered an extensive view of ranges of hills to the south. This outlook, most desirable and satisfying to us, was the basis of Soriano's house orientation and plan development. . . . We feel profound gratitude for and appreciation of the architecture.

A major client contribution was Shulman's program requirement of screened areas immediately off rooms which would have sliding doors: "My personal feeling is that the extension of architectural space by this device makes the difference between being able to use sliding doors readily in almost all types of weather and the situation when sliding doors open directly to an adjacent outdoor area. . . . Not only do screened areas provide insect control but also, perhaps more important, they extend room areas outward and create a feeling of enclosure that psychologically as well as visually conveys comfort and protection. I feel strongly that one of the most adverse reactions that people have to modern houses is the lack of a transitional area between indoors and outdoors." He further points out that such screened areas, particularly along a sunny south wall, reduce glare by almost 50 percent.

In addition to the two projecting screened patios —off the living room and the master bedroom— indoor/outdoor links include a recessed, screened dining patio and a landscaped court between house and studio (right) which are joined by a covered walk. The photograph on page 103 is a view along the south wall, taken from the screened patio adjoining the master bedroom.

The New House-to-Site Transition

The centrally located kitchen (right) *opens through to a recessed, screened, dining patio that serves as the interlude to the outdoors.*

A screened patio occurs between master bedroom (below left) *and the landscaped site. The plastic screening is green, which "blends so perfectly with the landscaping that one is hardly conscious of its presence."*

A small-scale, low-walled play garden outside the child's bedroom (below right) *is the intermediate step to complete outdoors.*

In designing a house, Soriano strives toward the dual goal of "the most useful house for a client" and "the most successful house for an architect." A "useful" house he defines as "a performing house; a house that well serves its occupants, from the unified point of view of his total sense experiences." One of the contributory functions of the architect, he feels, is to distinguish between the arbitrary wishes of a client (which may be no more than preconceived notions or personal whims) and objective requirements and needs—for example, the screened living extensions that the Shulmans knew they wanted. "In objective reasoning there are involved constant evaluation and integration of the relations of the constructive elements for performance," he remarks. "The smallest semblance of a mere personal feeling, trick, or whim inflicted upon the work can destroy the natural concept." How successfully he analyzed the problem in the design of the house shown here is indicated in Shulman's statement: "The entire development, orientation, and plan have worked out to our complete satisfaction."

Built on a concrete slab, with integral radiant-heating system, the house is framed in steel—6-in.-wide-flange I beams, modularly spaced and supported on 3-in. round steel columns. Transparent walls consist of aluminum-framed, sliding glass panels. Wall at the back of the garage and wall of the studio patio are both translucent glass. Exterior curtain walls are painted cement plaster, while the garage and entrance doors are corrugated aluminum. For floorings, asphalt tile (service areas), cork (entry), carpet (living/dining), rubber tile (kitchen and bedroom/dressing areas) and a resin-base, synthetic, sprayed-on material (bathrooms) are all used. Ceilings throughout have a plaster sand finish.

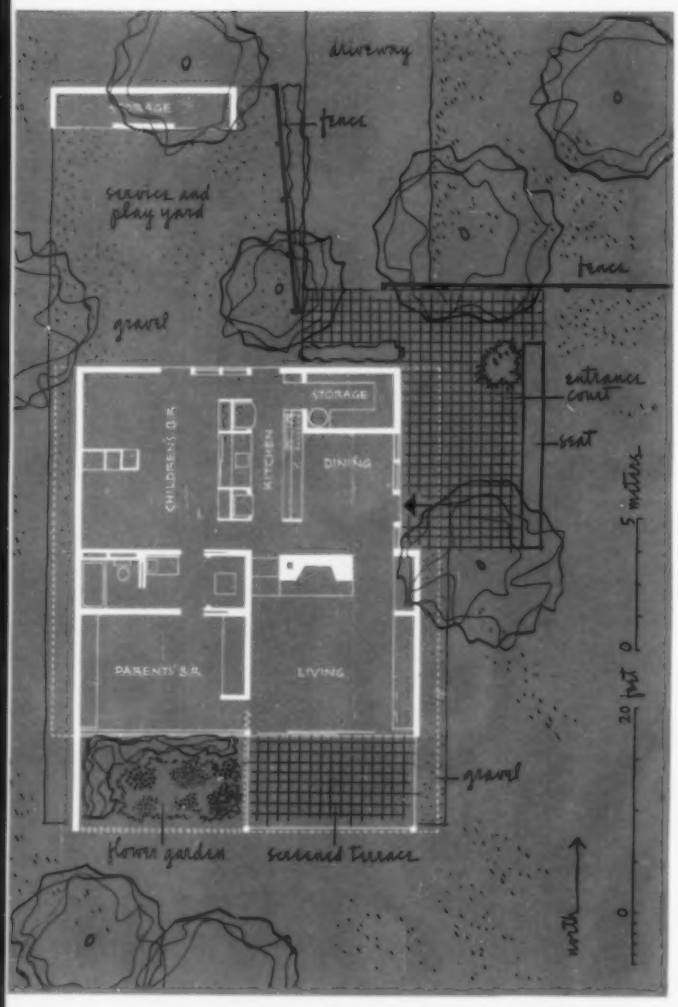
In warm weather, when all the sliding doors are open—as on the north wall of the gallery (beyond storage wall, top photo) *and out to the south-facing screened patios* (above)*—Shulman reports that "the house becomes one large, pavilionlike area, permitting a ready flow of traffic as well as inducing a breezeway flow of air."*

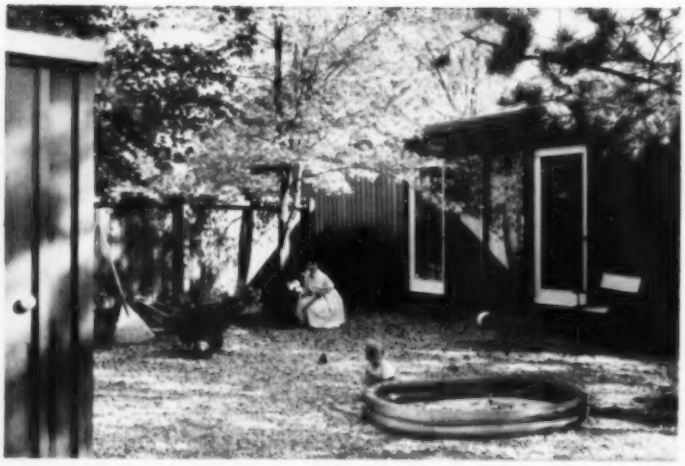
At the left of the main entrance (left), a full-height, sliding, translucent-glass door opens directly to the studio (below), from which one looks back across a landscaped patio to the house proper.

Use of steel for framing—although about 5 percent more costly than wood—provided lightness, thinness, and optimum freedom in placement of partitioning.

Shulman is not wholly sold on the dead-level roof, though adequate drainage was provided around the perimeter and there has never been a leak. Occasionally, however, a high wind has blown rainwater away from the drains and over the edge, causing slight wall streaking. The answer? Perhaps a slight roof pitch, he suggests, or a higher gravel stop or baffle of some kind.

In the genial Southern California climate, one wishes to be outdoors as often as in, and in this house there is a truly remarkable series of choices of type of surroundings—from being completely in the open, as in the landscaped studio patio (left), *to the semishelter of the screened enclosures* (below, *background*), *to the total protection of the indoor fireside.*



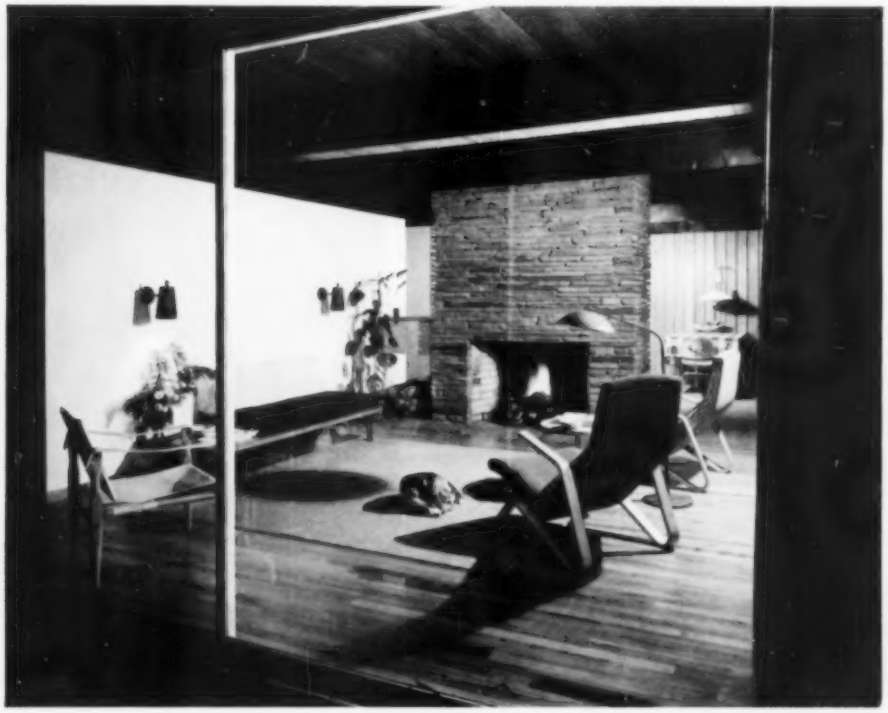


planned site

enlarges the small house

Lexington, Massachusetts. *Frank Schlesinger, Designer; Jeanne Schlesinger, Landscape Architect.* Photos: Peter Nyholm

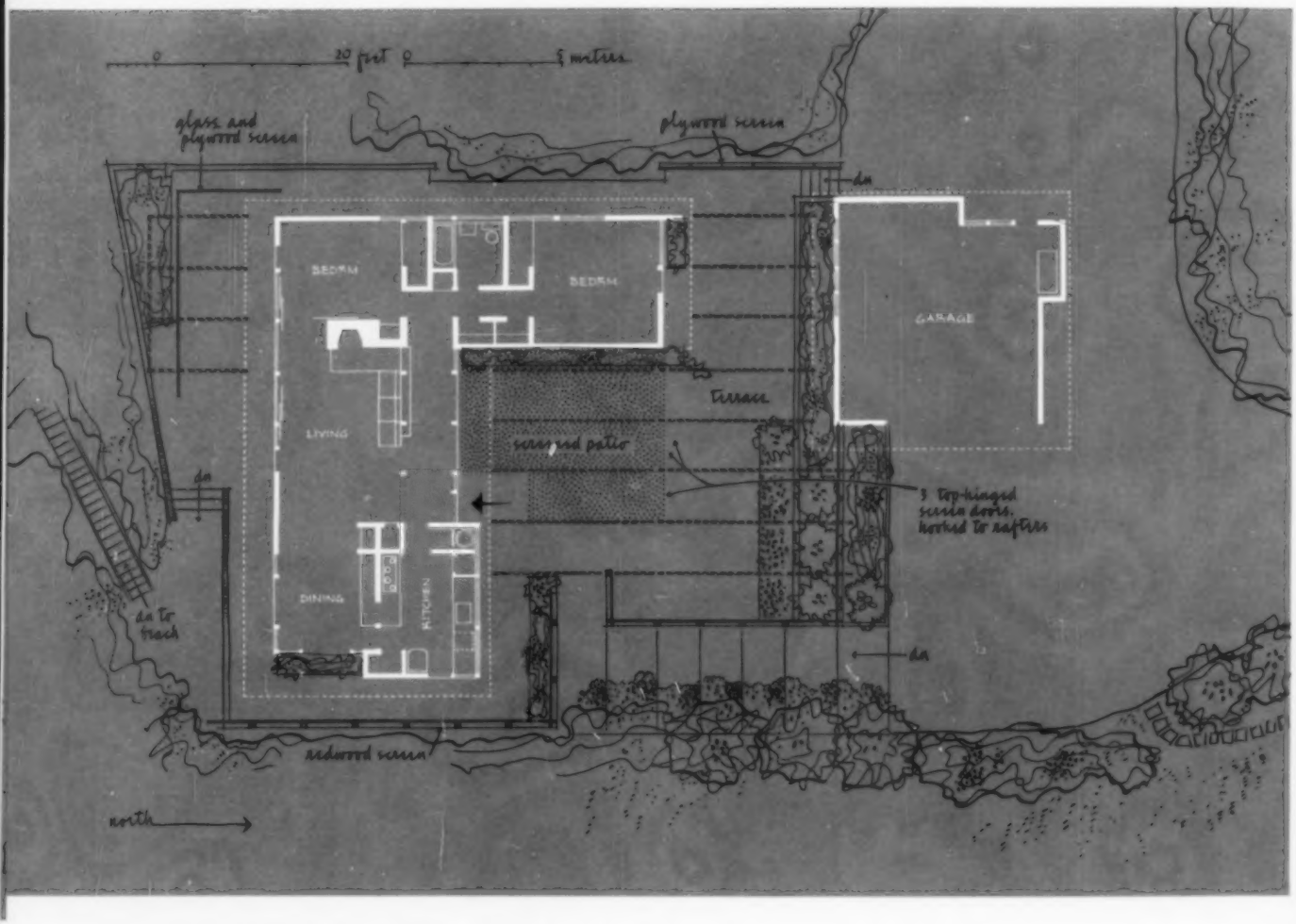
Well-planned transitional areas on three sides of this compact little house aid constructively in enlarging it visually as well as physically. A roofed and screened terrace serves as extension for the living room during the greater part of the year, and an adjoining flower garden links the parents' bedroom with lawn and trees beyond. Kitchen and children's room open directly onto a well-protected and graveled service and play yard. And an entry court on the east—strongly defined by brick paving, wood bench, and fence—helps to establish the pleasant character of the house. Views from each of the rooms are thus as varied as possible and provide pleasant spatial sequences for persons moving from one part of the house to another. Diverse spatial sequences are further emphasized by varied light intensities—achieved by roof overhangs, skylights, and by contrasting pools of artificial light at night. Another major consideration in the arrangement of this house for the designer's own use was the provision of generous and practical space for two young children. "Too often," explains Schlesinger, "the design of a small house becomes a mere 'shrinking' process wherein schemes suitable for larger homes are scaled down to size in order to produce the 'standard' number of rooms and facilities. The practice of assigning one or two small bedrooms to the children generally results in turmoil—to the dismay of the parents, the living room and kitchen become their playground. I have attempted to meet this condition by turning over approximately 25 percent of the total area to the children."



Foundations are of poured concrete, the structural frame is of wood. Roof members are 4"x14" beams set 6'-0" o.c. and 6'-11" from the finished floor. Roof surfacing is of 2" T&G wood planking topped with 5-ply built-up roofing. Exterior wall surfacing is of redwood board and battens. Heating is by forced hot air through ducts in the crawl space.

The New House-to-Site Transition

Malibu Encinal, California. *Gordon Drake, Designer; William Stimmel, Associate; Douglas Baylis, Landscape Architect; Fred Harrison, General Contractor.* Photos: Julius Shulman



subtle transitions provide degrees of enclosure

"Wouldn't it be wonderful," said Gordon Drake on one occasion, "if, when you entered a highway tunnel you first passed under a long, more-open type of enclosure to ease the shock of light to dark?" This concern with the transition from open sky to complete enclosure which was the basis of his design approach and is, incidentally, the theme of this issue, is remarkably well illustrated in this house, completed shortly before his untimely death. William Stimmel, a former student of his and associate, describes the sequence of enclosures on approaching this house from the street above: "First one passes vertical plant and structural screens; then into a garden area, enclosed by screens; then under open beams, partially covered by vines; then under the roof overhang, into the main living area; and then to the den or bedroom, which are closeable to give one a feeling of the cave—in this subtle transition one is almost unable to separate house from landscaping." In order to gain a view of the sea from the main living areas, the house was set well forward on a cliff about 40 ft above the beach. To protect house and beachside terrace from high winds and severe weather conditions, a partial glass-and-plywood screen has been erected. For outdoor living completely protected from the sea breezes, a screened patio, nestled in the angle of the house, has been provided. Paving of these terraces is mostly common brick, laid mortarless on 2″ of sand. Terrace retaining walls are of a pink-tinted concrete block, each course lapping the next by ½″. Outdoor screens are for the most part of natural-finish redwood. Structurally, the house was arranged on a 5′-4″ module using post-and-beam construction. Walls, light soffits, and other elements were detailed at one-half or one-quarter of this module, in both directions.

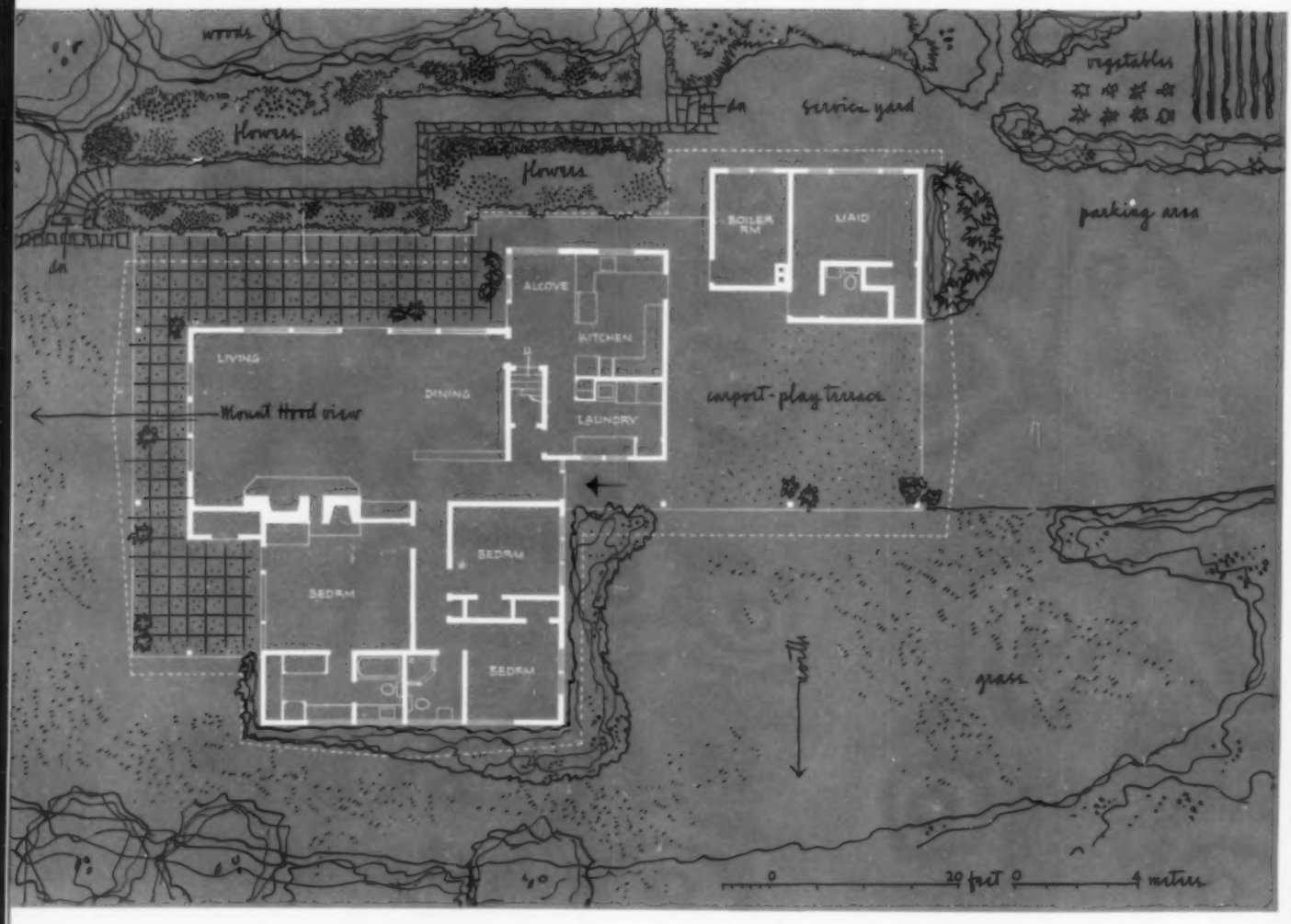
Approach to the house is from garage level along stepped walk (above) *to entrance court 4 ft below. Space between garage and bedroom wing forms secluded, wind-protected terrace* (left). *Set far forward to take advantage of sweeping sea views, house* (below) *gains protection from strong winds by strategic placement of plant material and structural, redwood screens.*

Lighting throughout the house is carried in continuous soffits of various widths, mounted at door height. Soffits are also subtly used to define living areas without the use of floor to ceiling enclosures, as for example between entrance hall and living room (above), *living and dining room* (below). *Screened patio* (left), *though oriented away from the ocean side, offers wide sea views through living room.*

Colors follow the structural organization of the house —beams and posts are painted black-green; sash and doors, gray-green; ceilings, sand color; interior and exterior walls are of natural-finish redwood. Flooring is of cork. Shojii screens at glass line of living-dining room (below) *employ Japanese rice paper on stretched muslin and natural burlap. Diagram* (below) *is of wind screen at edge of terrace.*

The New House-to-Site Transition

Portland, Oregon. *Van Evera Bailey, Architect; Walter & Florence Gerke, Landscape Architects; James H. Miller, General Contractor.*
Photos: Hedrich-Blessing



sheltered terraces extend interior space

The promontory-like site made a harmonious wedding of land and living rooms almost obligatory. To the east is a dazzling, straight-on view of snow-capped Mt. Hood and, to the south, the land falls away into a rich, heavily timbered valley. Buffer zones between rooms and lawn and garden consist of deep, sheltered, paved porches which may be furnished for dining and lounging. These frame and set off the views beyond. The full-height window at the east end of the living room brings the drama of the site inside the house.

Structurally, the house is remarkable in its use of woods. Especially in the laminated-roof construction which has no ridge beam and is solid 4-in.-thick rough-sawn fir consisting of alternating 1′x4′, 2′x4′, and 3′x4′ members that interlock, like the fingers of both hands, at the ridge. Members of the longer run (from north wall of master bedroom to ridge) are 28 ft in length. Outside, inclined struts above the south porch resist hinging tendencies at the plate. Hand-split cedar shakes over 45# roofing complete the construction. Exterior walls of the house are alternating 1′x2′, 1′x3′ and 1′x4′ rough-sawn, vertical cedar.

The house rests on a concrete slab, in which hot-water coils for a radiant-heating system are embedded. Much of the glazing is fixed and stopped in place; vented windows are metal casements.

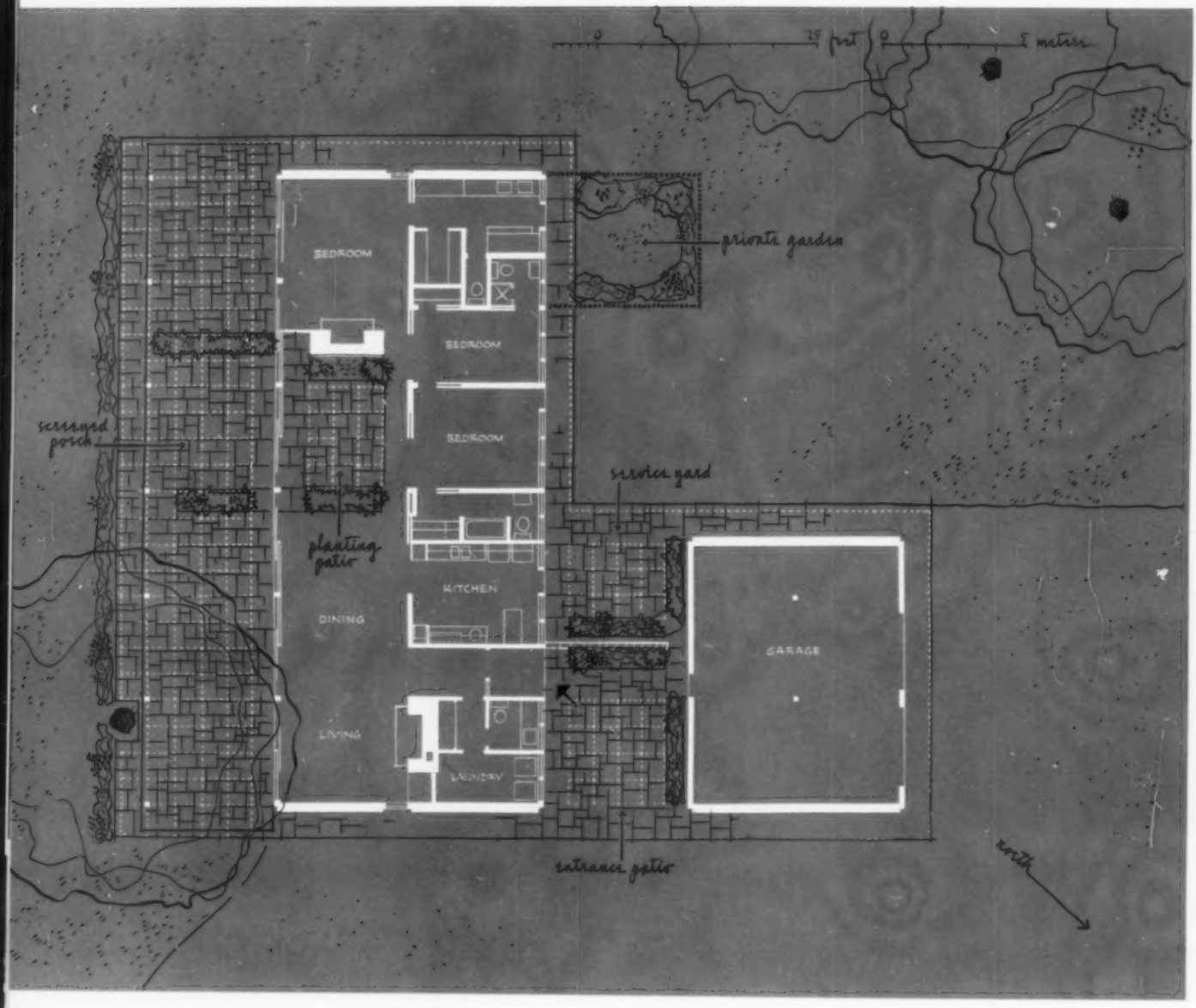
On the north (entrance) *side of the house* (left), *the paved, covered passage and ample, recessed carport/play-terrace introduce a secondary theme between house and greensward.*

Morning sun floods the re-entrant terrace space adjoining the master bedroom (below).

Note the up-sloping, paired struts over the south terrace (below left) *that help stabilize the remarkable roof construction.*

The New House-to-Site Transition

Old Westbury, Long Island, New York.
Richard W. Snibbe, Architect; Peter W. Bruder, Structural-Mechanical Engineer; Jose Campofranco, Owner-General Contractor.
Photos: Lionel Freedman



screened terrace facilitates outdoor living

A number of pleasant and useful spaces make the transition from this house to its beautiful site—a corner section of an old estate, rich with magnificent trees and rhododendrons. Entrance to the house is through a spacious patio between garage and house proper. A fully enclosed private garden has been designed as part of the elaborate bath/dressing area of the master bedroom. Most important transitional element, however, is a screened and plastic-roofed porch extending along the entire 72 ft south front of the house. Well suited for everyday use as extension to all of the major rooms, the porch is especially practical for large social gatherings. Since partitions and corridors between living room, dining room, and interior patio are merely indicated by plant screens and furniture placement rather than permanent partitions, the entire area can be used as one unit. Two bedrooms, occasionally occupied by

members of the family or guests, may also be added to this main living area by adjusting sliding wall partitions. Center of this entire complex is a skylighted planting patio which introduces light and color into the interior of the house. Warm earth colors predominate throughout the rooms, since most of the materials are left in their natural hues.

The foundations of this house are of concrete; structural framing is of wood, employing posts and beams. Floor construction over crawl space and partial basement (required by local code) is of 3″x8″ joists, surfaced with teak flooring. Stone veneer and fir siding are the prominent exterior materials; fabric wall covering, marble, tiles on plasterboard, the major interior materials. Important lighting fixtures have dimmers, and electric outlets are provided every 4 ft. o.c. along the floor. The house is completely air conditioned and heated by an oil-fired warm-air system.

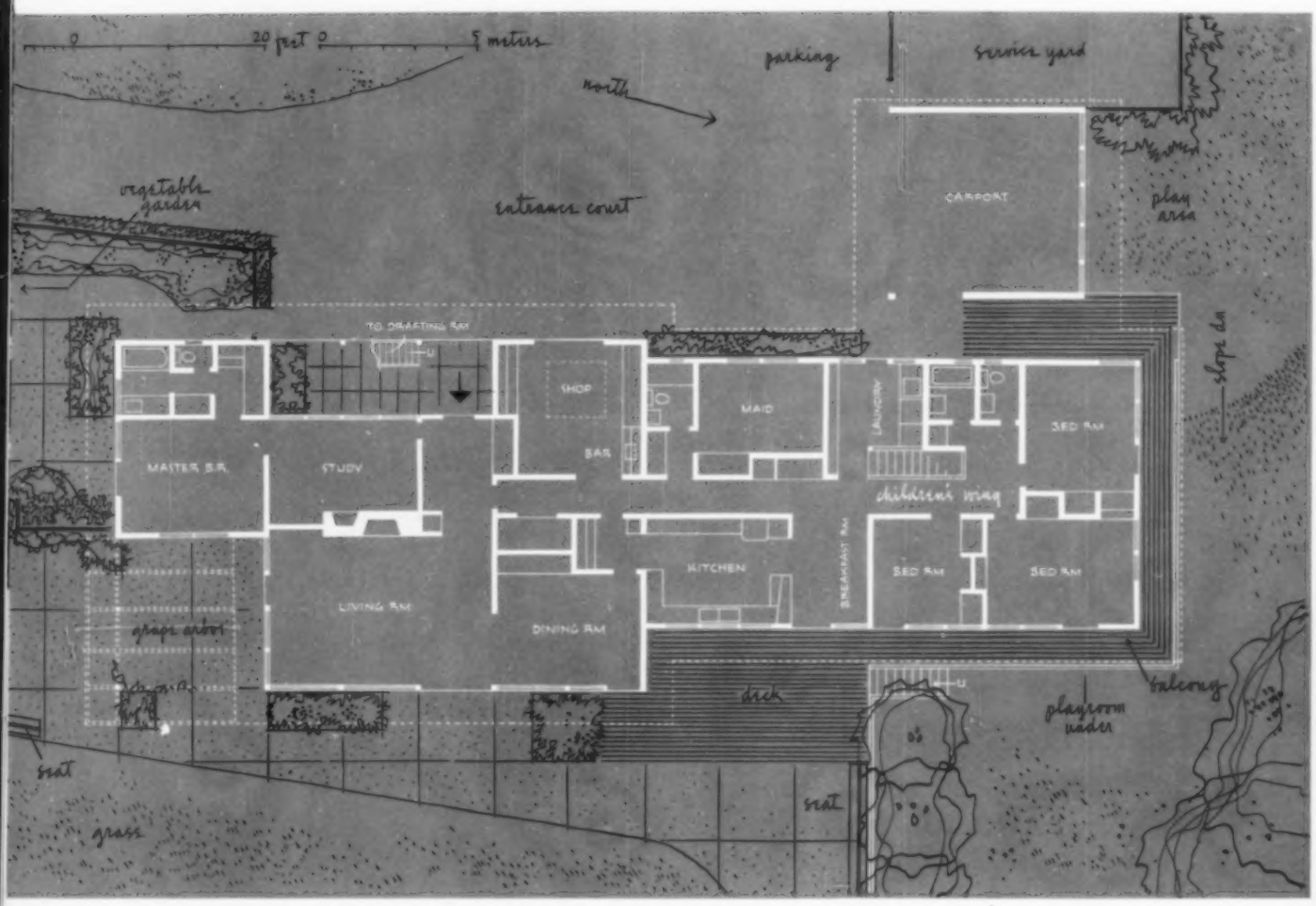
House (above) *was carefully sited to avoid losing beautiful existing trees—only two had to be sacrificed. Planting bed* (left) *in center of house helps to tie in with landscape beyond. Room in foreground is guest bedroom. Kitchen* (below) *has large window wall as well as skylight.*

Service yard (top) *is separated from entrance patio by 4" thick free-standing stone wall. Roof of 14'x72' screened porch is of plastic material, flooring of slate.*

The New House-to-Site Transition

Kentfield, California. *Rebecca Wood Esherick, Architect; Joseph Esherick, Consulting Architect; Lawrence Halprin, Landscape Architect; Farré Bros., General Contractor.*

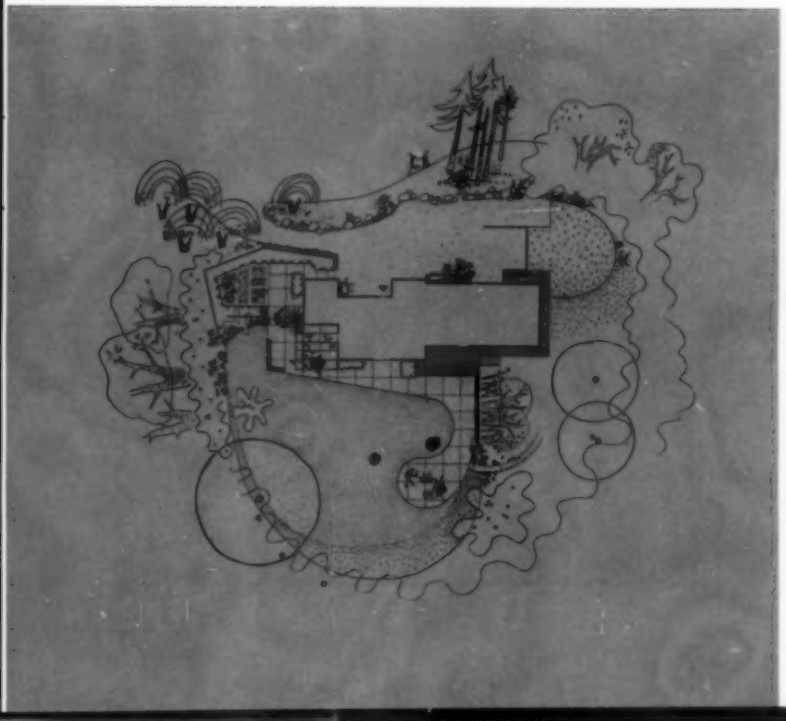
Photos: Ernest Braun



landscaped for privacy and useful living extensions

This house, which turns its back to the road, the entrance drive, neighbors' houses, winter storms, and western summer sun, opens on the opposite side toward a huge oak tree in the foreground, a natural border of woodland, and a mountaintop in the distance. Plant screens and fences on the remaining exposures complete the house's privacy. Interior planning for this family of architects and three children falls into place logically with the parents' quarters toward the south, while a shop, maid's quarters, kitchen, and dining room form a buffer separating the two-story children's section to the north. Great variety has been achieved in the treatment of transitional areas, in every case appropriate to the adjoining interior spaces. Living room and master bedroom share a quiet corner porch partially covered by a grape arbor. To the south of the living room the large oak provides shade for the extensive glass area, yet permits penetration of the winter sun. It also forms a link between the house and a barbecue terrace. A wooden deck off the kitchen offers a convenient outdoor dining space and provides access to balcony serving all of the children's rooms. To the northwest, the same balcony connects with a play and service yard. An entry porch on the west, gives access to the main living quarters and office upstairs. To the south-west, a fenced garden is set aside for the growing of vegetables and cut flowers. In this way, every piece of the property has been given a purpose and all parts of the house provided with the widest variety of outlook.

In the construction of the house a 4′ module was observed throughout. Flooring in the main living section is a concrete slab on grade. The two-story children's wing, with bedrooms upstairs and a playroom below, employs wood joist construction with asphalt tile flooring. Walls and roof are of post and beam construction. Exterior wall finish is 1″x10″ T&G redwood siding.

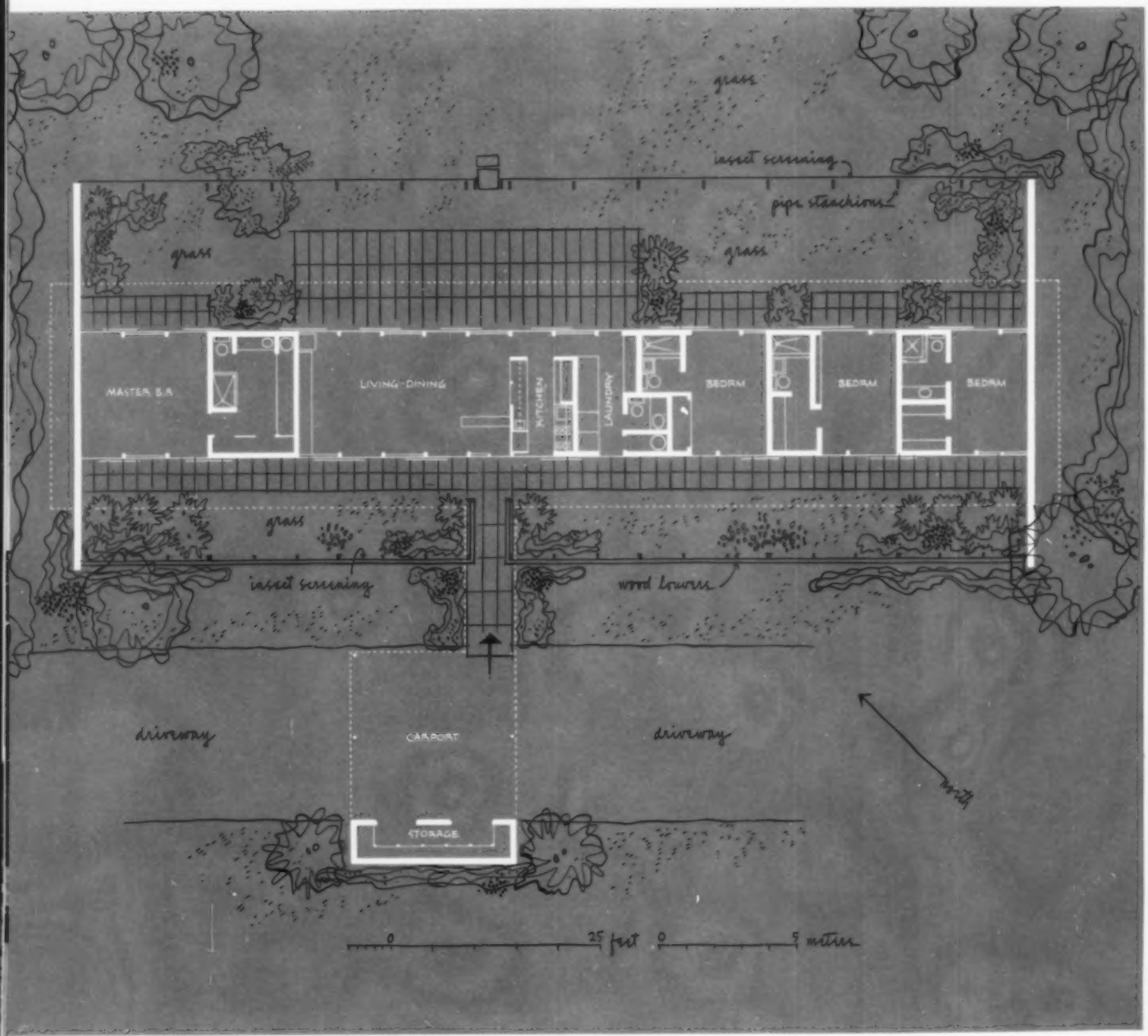


House (bottom), *seen from the driveway on the west, is almost windowless except for maid's room and architect's office under gables. Skylighted shop has 8'-wide blind doors toward driveway for bringing in materials, cars, skis, etc. On the opposite side, living/dining room* (right *and* acrosspage bottom) *is totally glazed on its south and east sides for enjoyment of lawn, terrace, and treetops.*

Wife, who is practicing architect, uses office and drafting room (above), *accessible from stairs which lead up from entry porch. Mother can work in privacy (no children allowed upstairs) but commands a view over entrance drive and living room below. Kitchen* (right) *with beautiful outlook toward garden, is large on theory that children can learn to cook and help.*

The New House-to-Site Transition

St. Petersburg, Florida. *Rufus Nims, Architect; Alois Steinwachs, General Contractor.*
Photos: Alexandre Georges

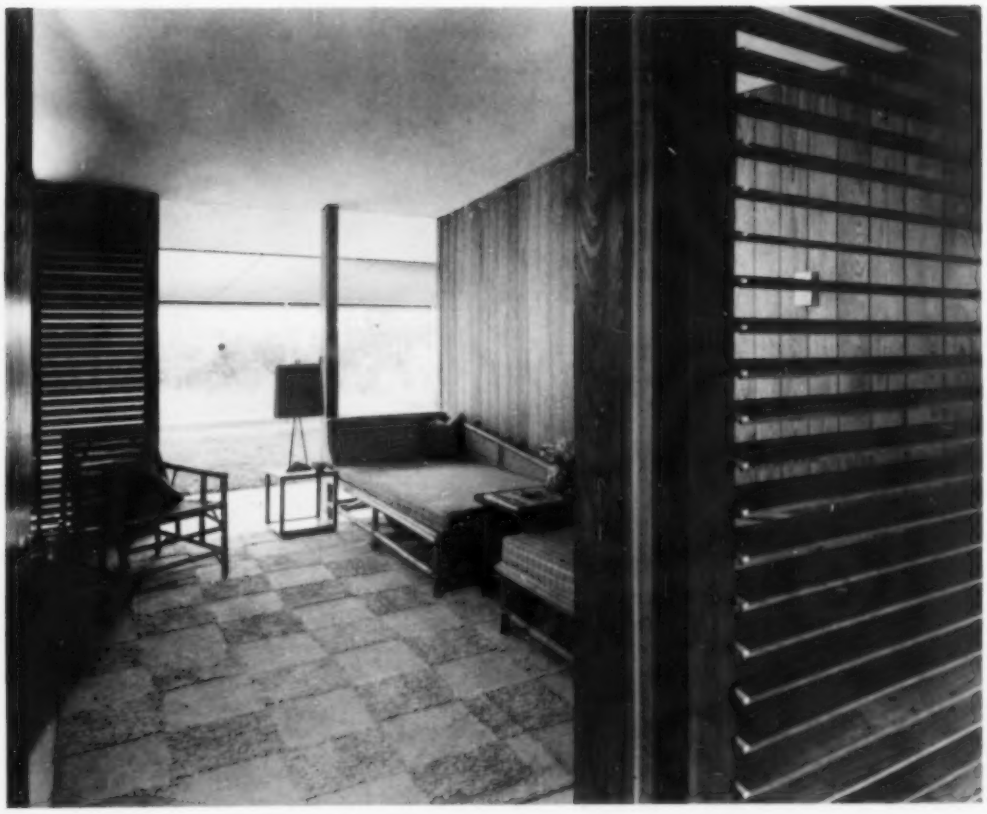


all rooms extend to screened outdoor space

"The house," writes architect Nims about this residence for a family of six, "is essentially a porch strung continuously between two gardens." This strip plan with circulation outside the house offers many advantages in Florida's subtropical climate. Through-ventilation is obtained for all interior spaces since house is only one-room deep. Interiors as well as gardens are insect-proof, and, most important of all, the two gardens are readily accessible and truly useable. The narrower of the two gardens (*above*) faces the street and carport. A louvered fence breaks the vision from the outside into the house and a wide overhang offers weather protection for the exterior passage way, which connects with all of the rooms. The terrace on the opposite side (*below*) faces a view of the water and is the outdoor living extension for all of the rooms. Actual enclosed space is thus kept to a minimum in the rooms which reach from one garden to the other. When privacy is wanted, wood jalousies in sliding tracks permit cross ventilation even though closed; alternating clear glass panels admit light to the interior. Divisions between rooms are cores of masonry containing plumbing and storage. Heat is provided by electrical-resistant coils in the plaster ceiling.

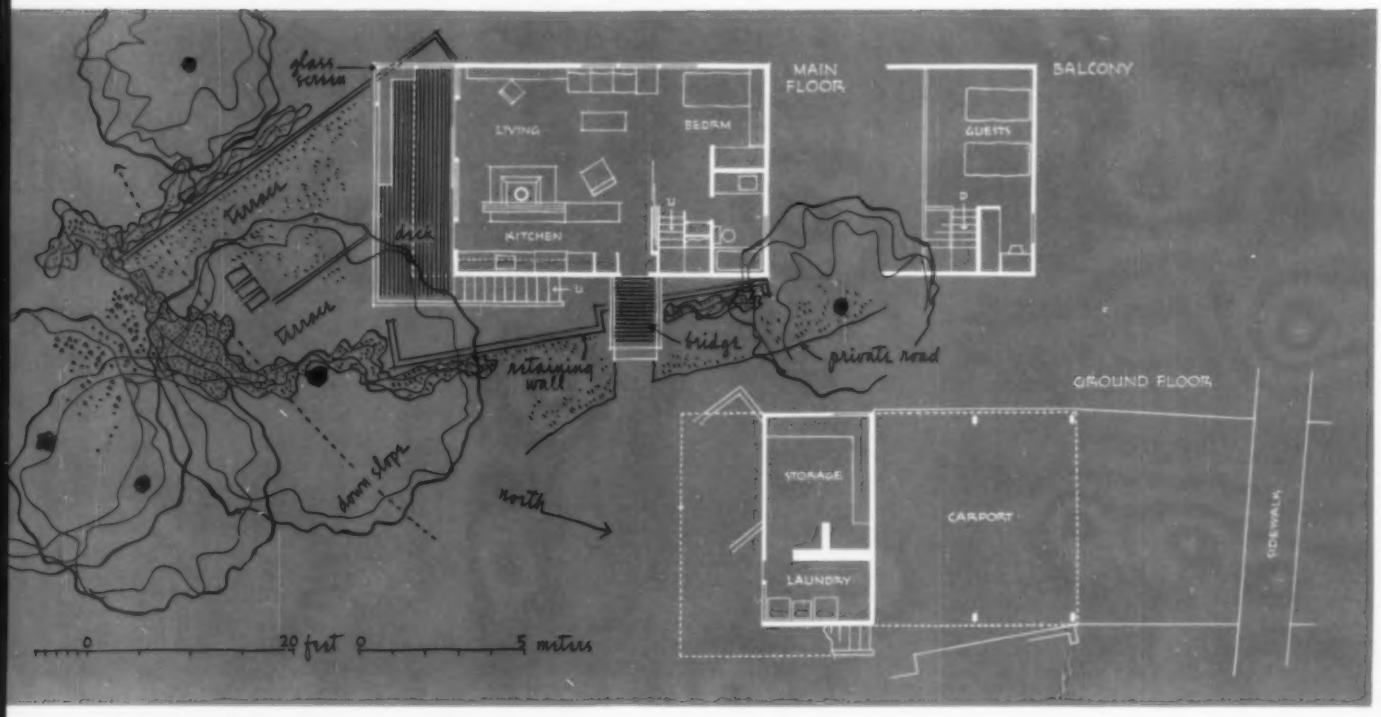
Every room, including kitchen (below) *has cross ventilation and borders on two screened gardens. Instead of interior halls, walkway in the garden on the street side* (left) *provides access to all of the rooms. Garden opposite* (above), *seen from the outside, has wide living terrace and view across bay.*

Living room (above) *takes up entire width of house and separates parents' quarters at west end of house from children's rooms on the east* (below). *For its warmth and weathering properties, redwood has been used liberally throughout interiors.*

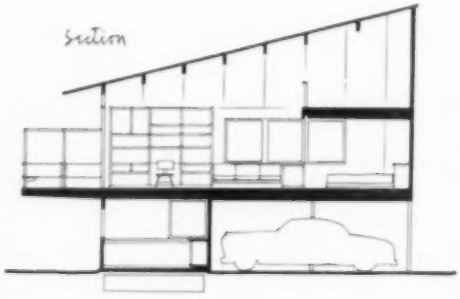


The New House-to-Site Transition

Berkeley, California. *Roger Lee, Architect; Willis Foster, General Contractor.*
Photos: Rondal Partridge



hillside aerie opens to balcony and view



A steep, wooded slope with eye-filling views of San Francisco Bay to the west and the Berkeley hills to the south were governing factors in the design of this unusual, essentially one-room home for a single woman. To appreciate fully the physical and visual progressions that have been developed to link enclosure and terrain, one must view the design both horizontally and vertically.

To begin with, the main living floor is perched above the site, allowing both under-house car storage and optimum viewing for the main-floor level. Between land and living floor on the east is a connecting bridge from the ground. To relate house to view and treetops, an 8-foot deck, with glass wind screen and built-in seating, is cantilevered from the main structure and connects by a stair to the ground. The huge window wall and doors facing south and bordering the living space form a total visual indoor/outdoor link, while the guest bedroom balcony provides a platform from which the full effect of house-to-site relation is dramatized. Sliding panels close the main sleeping room from the living space.

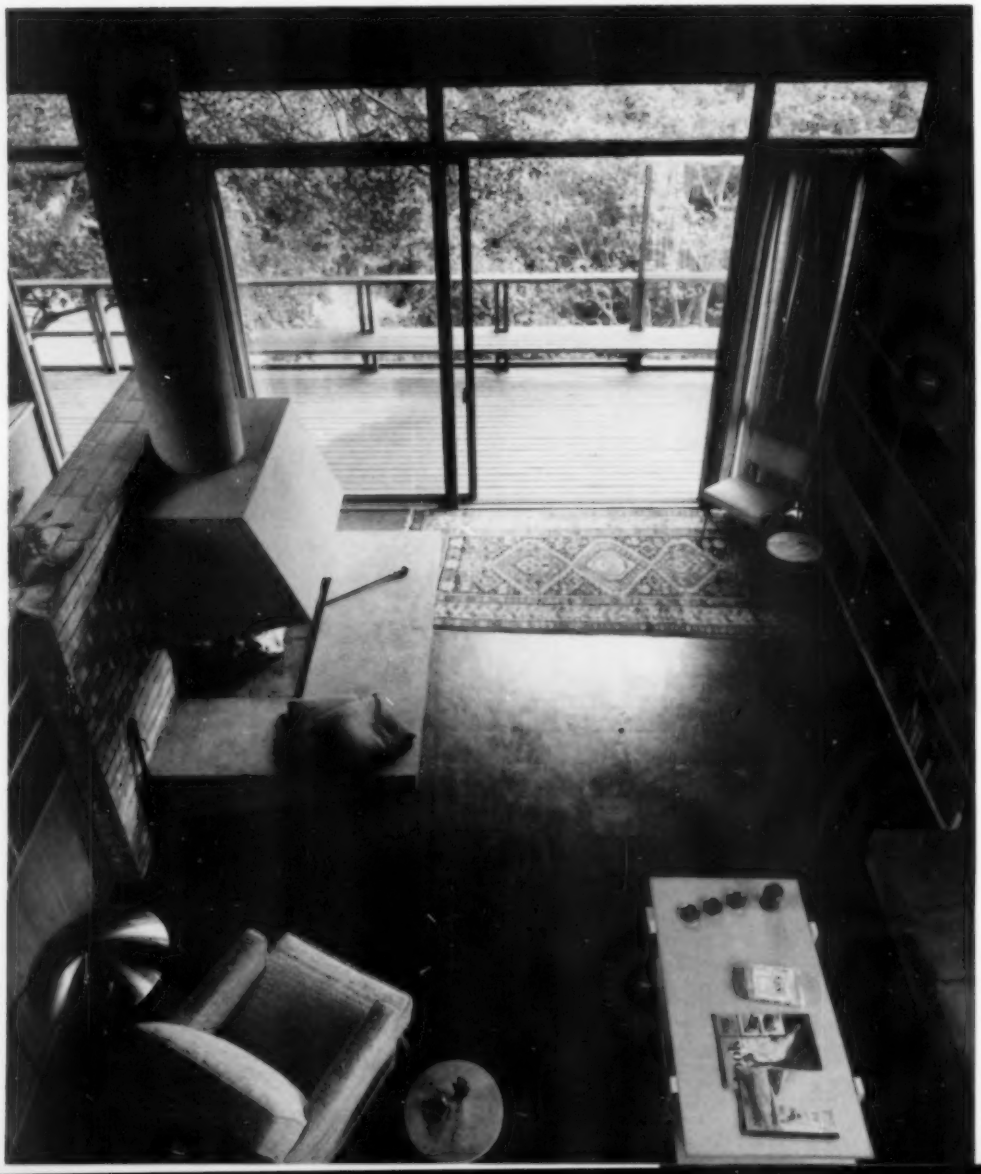
Exterior walls are redwood; interior surfaces, vertical-grain Philippine mahogany. The house is heated by both gas floor furnace and electric wall heaters.

The front door (top) *is reached by a ramped, wood-deck bridge.*

Even the cooking space (above) *shares the view and opens to the treetop, cantilevered deck* (left).

The owner uses the rear of the main floor for sleeping—a space that may be wholly enclosed by three sliding panels (right). *Immediately above is a balcony for guests.*

From the balcony (below), *the transition to living floor, through opened wall, to outside deck, trees, and view is striking.*



vinyl-latex emulsion paints

by J. S. Long*

During recent years water-emulsion paints have become extremely popular and as many as 40 million gallons have been sold in one year. Their appeal is based primarily on certain functional advantages: (1) The resin particles (a copolymer of butadiene and styrene) are suspended (emulsified) in water which makes the paint easy to brush or roll. (2) These paints have little objectionable odor so that one can paint a dining room after luncheon and enjoy supper in it the same day. (3) They dry rapidly and "touch up" easily with no significant difference in hue. (4) They wash well after a period of aging. On the other hand, their limitations are: (a) Adhesion to smooth glossy surfaces is relatively poor. (b) Sheen is too high.

A new water-emulsion paint possessing all of the desirable features listed above has now appeared and, in addition, it has excellent adhesion to smooth, glossy surfaces, can be formulated at a lower sheen, washes well, and drys sooner than the butadiene-styrene type. Its vehicle is vinyl-latex emulsion. Present judgment is that it will largely make obsolete the butadiene-styrene type.

A word about polyvinyl-acetate latex —the principal constituent of some vinyl-emulsion paints. If acetylene (made by action of water on calcium carbide) is treated with acetic acid (vinegar), it yields what is called vinyl acetate. Vinyl acetate when heated or subjected to certain other conditions polymerizes—that is, the individual molecules join one another to make polyvinyl acetate. (The word "poly" means that many single vinyl-acetate molecules have joined to form a large one.) Because the types of resins used in vinyl-latex emulsions are made of long-chain molecules, paints containing them bridge well over small cracks such as fire checks on white putty-coat plaster. They also seal a wall, well. Vinyl-latex paints are resistant to alkali so that when applied to new unseasoned lime-containing plaster walls, they perform well. Because of the sealing action, the alkalis that are present do not cause paints to burn.

Further, since there is a water emulsion, it wets and lays the fibers on dry-wall construction which is important for the following reason. It is common practice to tape joints with paper tape and special compound; often, the excess compound is removed by sanding. This procedure roughens the nap on the paper adjacent to the taped joints. When painted, the small fibers are not wetted by solvent-type primers, such as alkyds, so they do not lie down. Water emulsions, however, cause them to lie down and yield a smooth finish. Conclusion: vinyl-latex emulsion paint is excellent for dry-wall construction.

With high-hiding, vinyl-latex emulsion paints, one coat is often sufficient. If a second coat is needed by the time the painter has gone around the room, however, he can start right over again and put on the second coat. It fits well with the contemporary need for speed.

A great variety of color is available in various color systems and intermixes. Prices are typical of high-grade, one-coat, flat wall paints.

Other types of resins, such as the acrylic emulsions, are also making an appearance at this time and a few manufacturers have chosen to offer these instead of the vinyl-latex type. At the moment, it appears that the latter has some advantage over the former—particularly in application properties.

Vinyl-latex emulsion paint is a good illustration of purposed design in the creation of protective coatings. As in the illustration cited above, the shortcomings of an existing product were "designed out" and eliminated. Consequently, the suitability of the product was greatly improved.

* *Research Consultant, Devoe & Raynolds Company, Inc., Louisville, Ky.*

concrete- and aluminum-frame summer house

Arthur A. Carrara, Chicago architect who created this house, is convinced that "any sound piece of architecture must not only be a part of the terrain it lives in, but must also reconcile the universal with the regional as well as bringing the mechanical and the human into great harmony." His interpretation of this conviction, in a summer house situated at Whitewater Lake, Wisconsin, is shown and described here.

When the architect first visited this site—a razor-back peninsula projecting 60 ft above water level and alternately subjected to heavy rain washes and unrelieved sun heat—he quickly sensed the opportunity and necessity to design a structure that would provide serenity and protection for its owner.

Since this lodge is used primarily during the summer months—all roads leading to it are impassable during winter—the primary thermal-environment considerations were to provide summer comfort. Using an age-old technique, concrete walls were "bermed" into the ground so that as the house nestled into its site a good measure of insulation was automatically provided.

Prefab-aluminum frames mounted on the concrete walls not only support the roof but also serve as sash for glazing. These sections, all precut by a greenhouse manufacturer and specially treated for outdoor use, were assembled with self-threading stainless-steel screws. Double-strength glass was precut and fitted into rubber channels. The remarkable ease with which the entire aluminum frame was assembled and the technique of setting glass in rubber solved the skilled-labor problem—"a serious consideration for a building site in the woods" Carrara points out. Actually, over 1½ tons of glass were set by the owner in two days. Vents placed at the ridge are operated by worm gears, spaced as needed throughout the rooms.

"Bermed" concrete walls (acrosspage *and* right) *automatically provide insulation. Ample roof overhang produces shade but does not severely limit view of surrounding terrain and lake.*
Photos: John Starkowski

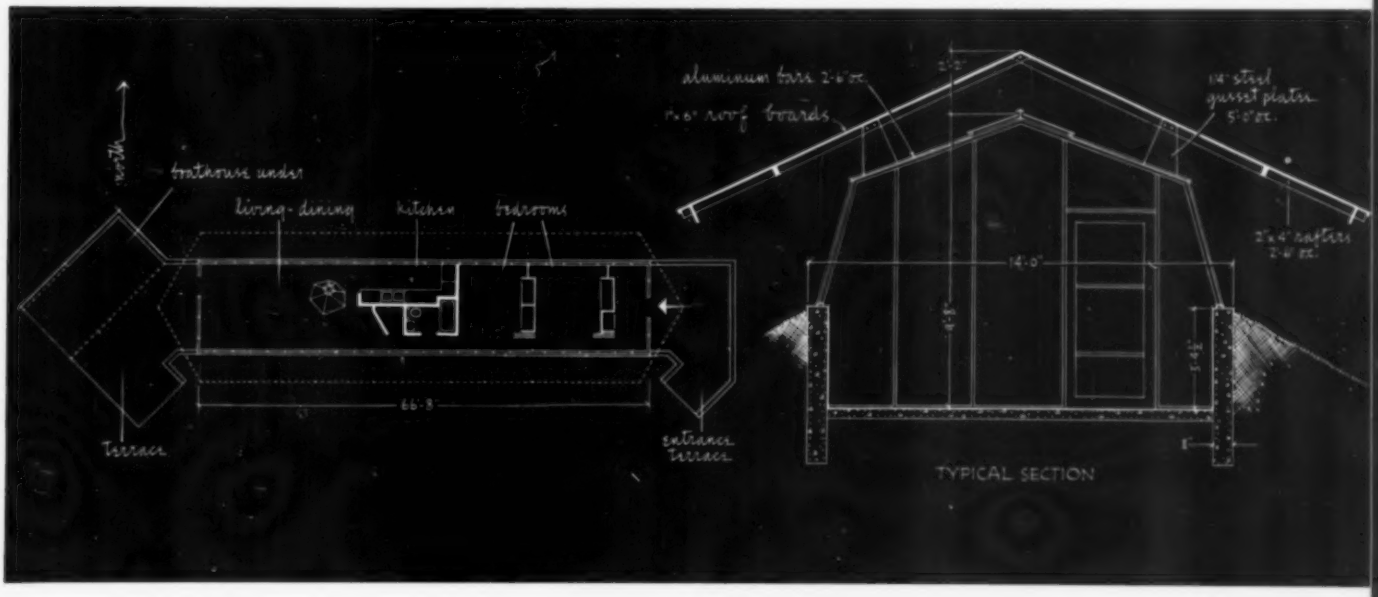
The large "parasol" roof is supported by structural-steel gusset plates spaced at five-ft intervals which carry the roof load to the aluminum framing (*detail page 139*). Separating the roof and the glazing in the top of the aluminum framing by an air space, simultaneously established the venturi-flow principle. As the sun strikes on the outer roof, the space between the wood and glass roof becomes heated and expanding air produces a flow. Thus the indoor temperature continuously responds to all outdoor changes immediately. Although the ample roof overhang provides precious shade, it does not obstruct views of the surrounding terrain or the lake.

The outer roof is constructed of T&G wood boards saturated with three coats of creosote.

In addition to the rooms at ground level, an enclosed space for dry-docking a boat is located beneath the terrace facing the lake. Excluding the property, the total cost of the building was $9000.

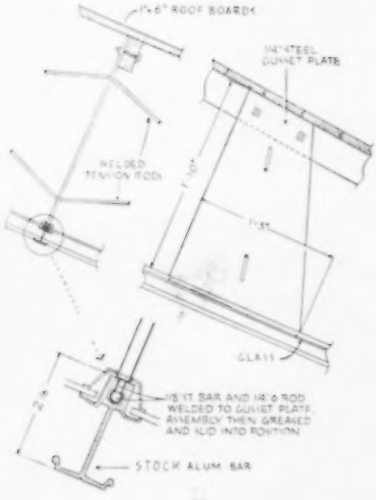
Additional comments from the architect help to document the house. "I never felt that the standard aluminum space frame was a hindrance in design. . . . I feel that the greatest advance in complete structure, that is walls and ceiling, has been most successfully accomplished by the greenhouse manufacturers. Their method of placing opening vent sash at the ridge is not only sound for controlling ventilation within, but at once simplifies entire structure. . . . Much can be said about the use of glass in a heavily wooded area . . . and the complete view of nature on all sides —at times so close that gophers nose the glass. . . . The entire shape and sol-air orientation is a result of much experimentation and confirmed by studies of Victor and Aladar Olgyay."*

** Currently in production at Princeton University Press is a book which documents the philosophies, research, and work of the Olgyay brothers.*



Concrete-aluminum frame house is located 60 ft above water level of lake (left). *Air moves through space between wood roof and glazed ceiling* (below) *by venturi principle.*

Steel fireplace was installed mainly for cool evenings in spring or late summer (right). *View of bedroom from outside* (below right) *clearly shows arrangement of steel gusset plates between prefab-aluminum frame and wood-plank roof. Detail drawing provides supplementary data on gusset design. Island between kitchen and bath separates bedroom and living-room areas* (below).


1"x6" ROOF BOARDS
1/4" STEEL GUSSET PLATE
WELDED TENSION RODS
GLASS
1/8 X 1" BAR AND 1/4" ø ROD WELDED TO GUSSET PLATE. ASSEMBLY THEN GREASED AND SLID INTO POSITION
STOCK ALUM. BAR

all-welded steel-frame houses

by J. B. McCormick*

If initial successes are reliable criteria, the steelworker's welding electrode may replace the carpenter's hammer in the framework construction of many functionally efficient homes. This abrupt forecast is based on fact—not fancy.

For many years, forward-looking architects and engineers have worked over plans for the "all-steel" dwelling unit—a home impervious to storms, fires, earthquake shocks, insects, and the ravages of time. Some homes have been built but, from the practical point of view, few of these "trial" homes could be classed as commercially profitable on a large scale.

Costs were out of proportion; erection time was excessive. Added to these objections, when the steel-framed structures were bolted, these "trial" homes were, strange to say, noisy. Temperature changes causing a slight expansion or contraction of individual steel members and wind stresses of sufficient magnitude to cause microscopic shifting of the structural elements—one against the other, in the bolted joint areas—set up annoying reverberations.

Eugene Memmler, a steel man and an experienced production engineer, has tackled this problem of commercially feasible steel-framed home construction and has produced significant results. Memmler did not concentrate on one structural material as being best for all purposes; rather, he surveyed many materials in order to decide which would serve best in the various phases of home construction, then correlated these into a carefully worked-out system employing contemporary building materials in ways that combine most efficiently to form a permanent, sturdy structure. Had Memmler concentrated on the use of steel in places where other structural materials would have served the purpose better and cheaper, his method might have been foredoomed to failure.

Memmler's system—which he labels "Moduplan"—calls for a welded-steel framework, a welded-steel roof deck, and welded-steel panel supports to be installed where necessary in a manner that facilitates his modular construction plan. Steel pipes, anchored in a concrete floor slab, support the entire weight of the steel roof deck and its covering. All joints throughout the structure are welded in a manner that completely prevents joint movement or displacement, regardless of the stresses involved.

This increasingly popular modular construction plan, which in effect follows the principle introduced by toy

* *District Engineer, The Lincoln Electric Company.*

All-welded steel framework for pilot "Moduplan" house erected by California designer Eugene Memmler (above). *Plumbing and wiring can easily be carried between roof and ceiling.*

More recent steel-frame house built on cliff overlooking Pacific Ocean (right). *Overhead view taken before roofing was applied* (below) *shows junior-beam framing with T-section grid welded to bottom flanges at 4-ft intervals.*

erector sets using standard-sized parts in the fabrication of any desired structure, makes it possible to prefabricate a large proportion of the steel framework before delivery to the job. This prefabrication of the modular sections can be accomplished quickly and economically, using standardized jigs, welding equipment, and steel components that have been precut to the proper length. When these prefab sections are delivered to the site, a minimum of on-the-job welding is required to join them together. Even this work is simplified by preattached-and-drilled clip angles, so that the modular sections can be bolted into place immediately prior to welding. The few bolts used to prejoin the modular sections are left in place after welding, mainly because it is cheaper to do so than to remove them, not because they serve a useful purpose after the joint assembly has been welded together.

In a typical home using Memmler's system, the wall-frame sections are made up of 3-in. standard pipe columns spaced 8′-5″ on centers anchored in the concrete floor slab. The column tops are welded to 12-in. junior beams, which in turn support the steel roof deck and its covering. The channel-steel roof-deck material is tack welded at intervals so that any roof stressing results in a diaphragm-like action rather than a noise-producing relocation of the panels.

Framing sections consist of vertical and horizontal T-sections equally spaced between pipe columns so that 4-ft wide prefab wall panels can be inserted and bolted in place. The edges of these wall panels are subsequently calked. Ceiling framing consists of structural T's welded to lower flanges of the junior beams at 4-ft intervals. These T-sections intersect and divide the interior ceiling into 4-ft squares, which in turn support ceiling panels.

The interior partitions are nonload-bearing and are of conventional wood-stud and plaster construction, or made up entirely of built-in storage cabinets. Necessary water pipes, plumbing stacks, and wiring are concealed in these partitions; all other piping and wiring is contained in the 12-in. space between the ceiling panels and the roof deck. These service lines may be reached for repair or inspection by merely moving aside one of the ceiling panels. The interior partitions were anchored to the floor slab and overhead beams by power-driven steel fasteners.

Electrical switches and outlets required on the exterior walls were built into structural channels covering the pipe columns. The 1½-in. thick vertical

Junior beams of roof being welded directly to vertical pipe stud (above left); *lower extremity of pipe is anchored to concrete floor slab. Workmen hot-mop roof deck made up of steel sections tack-welded together to prevent movement and noise and to provide diaphragm-like action to absorb stresses* (center). *Upper plate of interior wall section is anchored to nether flange of junior beam by power driven fasteners.*

Insulating wall panels, 1½ thick, are set between vertical pipe studs and steel T's spaced 4-ft on center (below left). *Ceiling panels are laid in place and supported by flanges of structural T's* (below right).

panels set between the upright T's and columns are made of asbestos-cement sheets laminated to an insulating core and have an insulating value equal to 25 in. of solid brick.

During construction of the home, a cutting torch was used to open necessary pipe lead and wiring holes through the junior beams in the space between the roof and ceiling. When finished, the entire loadbearing framework of the house, as well as the steel roof deck, was a unified, homogenous welded structure—including the welded-in-place wall framing which provides a rigid support for the interior partitions. Yet the entire structure is so designed that it includes sufficient flexibility to offset expansion and contraction, absorb unusual stresses, and even "give" with an earthquake shock without harm to or movement in any of the welded-joint areas.

The above-described home encloses about 2250 sq ft of heated living area. Cost of the finished structure—including draperies, budget for landscaping, and such refinements as radio-controlled garage doors, but not including fees for landscaping or architect or financing—was about $14 per sq ft. With fewer refinements, it is estimated the cost would have been about $12.50 per sq ft. This compares very favorably with better "Class A" wood-framed homes. The various homes already completed using "Moduplan" construction have varied in cost from $10 to $14 per sq ft.

Prefab units for the home were assembled in Memmler's small steel yard at Monrovia, California. Simplified, home-built jigs were used to align and hold the components during welding. All steel was purchased precut to the correct length. A 200-amp a-c welder was employed for yard welding, while a 180-amp portable welder was used for field welding. A ⅛" electrode of the new iron-powder type was used for yard welding. This type electrode permits fast work, gives very little spatter, and requires a minimum of post-welding clean-up work. An E6011-type electrode is used for all-position welding on the job, using the portable welder.

Memmler's plan is to establish franchised yards throughout the nation to prefabricate and erect his steel-framed homes.

The initial modular structure is carefully laid out to accept standard-size steel casements, standard doors and frames, and standard-size wall and ceiling panels. A franchised contractor anywhere in the country can obtain these purchased units locally at minimum freight costs. Specialized structural units that are produced at one place only and not nationally available, are avoided.

View of "Moduplan" house before installation of ceiling panels (above). *Exterior and interior views of Memmler's own home* (right).

The Shifting Bases of Contemporary Criticism

*by James M. Fitch**

The content as well as the form of architectural criticism has undergone a fundamental change in the past half century. This has been largely a matter of vastly increased knowledge, both of the past and of the present-day world around us. As late as 1896, Sir Bannister Fletcher could set up a system of categories in which the successive architectural forms of the West appear as the "historical styles" and those of all the rest of the world as "nonhistorical." General advances in the science of history have made the repetition of this monstrous sort of error impossible. And this, in turn, affects the critic benignly, giving him a much more accurate perspective of the past than ever before. One has only to compare the Gothic world which Pugin and Ruskin beheld a century ago to that of Geoffrey Scott in 1914 or Pevsner today, to see how increasingly precise history has tamed the wilder and more lurid aspects of the critic's mind.

But it has always been easier to analyze the past than to criticize the present. When criticism deals with contemporary artistic developments, as opposed to the past, its task becomes more complex, more difficult, by definition. First of all, the critic himself is immersed in events, his judgments colored by his own positions and prejudices. Second, criticisms of contemporaneous events plays an active, functional role in society. On the one hand, it introduces the new development to the public; prepares it, so to speak, for the future. But criticism also reflects the public reaction to that new event and in this sense modifies the subsequent development of a given style or movement. Criticism, for this reason, has a far wider significance for architecture than we architects are apt to realize. A short review of the architectural criticism of the past quarter-century should prove this conclusively.

We know now that modern architecture was not the exclusive invention of a few gifted Frenchmen and Germans; and that it could not appear, full-blown, in Barcelona and Dessau and Paris and Chicago without a century of preparation, by many men, on both sides of the Atlantic. But we did not know this in 1925! For the purposes of our argument, we can safely say that, for the American people, modern architecture began with the famous show of 1932 at the Museum of Modern Art, which did for architecture what the Armory Show of 1913 had done for painting.

The vast range of social, economic, and technical forces which gave rise to modern architecture needs no recapitulation here. But, overwhelming as these forces were, they could not have succeeded without a vast literature of criticism which prepared the way for its development and ultimate victory as the absolutely dominant style of the 20th Century. This critical literature furnished the philosophic substructure on which the new architecture was to be constructed. And it is fascinating, today, to see how this rationale has shifted since the 1920's.

It was called by different names: Wright called it "Usonian"; Hitchcock and Johnson named it the "International Style" (and that proved to be its most used label). But a rereading of the literature of the period will show that the new architecture was not defended primarily because it was "modern" or "contemporary" or "International," but because it was "functional." Actually, of course, the philosophy of the new architecture employed a whole hierarchy of values; and different architects and critics gave them different emphasis. But generally speaking, the values were primarily *ethical* and *utilitarian* and only *secondarily esthetic.*

The very adjectives in use confirm this: modern architecture was "good" because it had "integrity"; was "honest,"

(Continued on page 192)

* *Author, Editor, Associate Professor at School of Architecture, Columbia University, New York.* *This discussion based on a speech delivered April 12 at annual dinner of The Decorator's Club of New York.*

In 1934, architecture like Le Corbusier's Villa Savoye (1929-30) at Poissy-sur-Seine, France, was hailed by Charles Harris Whitaker in Rameses to Rockefeller *for its "straightforwardness in line, form, and mass." He praised it as an "heroic effort to throw off the heavy burden of architecture as art, as advertising, as propaganda," adding "by recognition of basic things it lets the art emerge from the rightness of the building for its purpose."* Photo: Courtesy of Museum of Modern Art

In a 1952 issue of House & Garden, *the house built in 1950 by Ludwig Mies van der Rohe for Dr. Edith Farnsworth, near Chicago, was praised in quite other terms, for quite other values. Its "unique architectural spirit" was termed the expression of that "pioneering purist who wrote, 'architecture is the will of an epoch translated into space.'" According to the critic, "This house was a structure of implacable calm, precise simplicity, and meticulous detail."* Photo: Hedrich-Blessing

synthetic-rubber calking compound

by J. R. Panek*

Polysulfide synthetic-rubber compounds have been used extensively by the aircraft industry for integral-wing fuel-tank sealing and cabin sealing for more than 10 years. The requirements in this field call for a compound that can be gunned into place after all construction is completed. The gunned compound is then quickly converted to a rubberlike material which has excellent adhesion to aluminum, flexibility over a wide temperature range, and resistance to change by water and gasoline.

For economy of space and a better distribution of the over-all load, gasoline tanks are built into the wings of aircraft. The general method of assembly consists of riveting together sections of the tanks around many of the supporting members within the wing. Upon completion of all construction, the synthetic-rubber-based compounds are calked over all the riveted seams to give a completely sealed tank. The compound has to have excellent adhesion to aluminum, to be resistant to aviation gasoline, and to maintain flexibility over a wide temperature range. Because of the location of the tanks within the wing, considerable vibration takes place during flight. The service conditions are made even more drastic by the fact that an airplane may first be standing in the hot summer sun, with the surface temperature of the wings as high as 180F, and then suddenly it must ascend in a matter of minutes to altitudes where the temperature may be as low as —100F. Simultaneous with the sudden temperature drop, the wings and wing tanks are subjected to continuous vibration. The fuel tanks must be completely leakproof under these severe service conditions; otherwise, explosions could occur. Consequently, polysulfide compositions have been subjected to and have passed rigorous tests before being specified for aircraft sealing.

On close analysis, the problems confronted in making aircraft airtight and leakproof are very similar to those encountered in sealing metal curtain- and window-wall construction against rain and weather. The need in the building field is for a rubberlike compound that will adhere to a wide assortment of building materials; will adhere in spite of (restricted) lateral motion and vibration; and will be watertight over a wide temperature range. Applications that are particularly critical are window calking and glazing, embedment of air-conditioning louvers, calking between panels in curtain-wall construction, sealing flashing, and expansion-joint sealing.

The success of synthetic-rubber compositions in the aircraft industry has resulted in their specification for many difficult applications in the building field within the last five years. These compositions have been found satisfactory and show every indication of a minimum life, for a properly applied joint, of at least 20 years. Tests made on several samples of synthetic-rubber compounds in glazing exposed to New Jersey weather for 10 years show that the seal was completely satisfactory and that the compound was unchanged with respect to its rubberlike and adhesive properties, and its appearance.

Polysulfide synthetic-rubber compounds made by The Thiokol Chemical Corporation have been used in numerous exterior calking applications. Well-known structures where such compositions have been used are: Lever House, New York, for glazing; Republic National Bank, Dallas, for glazing and sealing frames in panels; Statler Hotel, Dallas, for calking window frames; Socony Mobil Building, New York, for sealing flashing, embedding louvers, and sealing preassembled window-frames.

It is well to remember that the performance of any compound is only as good as the precautions taken to insure proper mixing and installation. The synthetic rubber that appears to be most satisfactory for application in the building trade is a liquid with a viscosity similar to that of molasses. The incorporation of fillers thickens the polymer so that, in many cases, beads of the mixed compound can be applied to vertical surfaces without flow. In addition to these fillers, which also reinforce the converted compound, other modifiers are added to bring about other desired characteristics. One additive is used to obtain excellent adhesion of the compound to aluminum, steel, glass, and other surfaces. Another additive is used to give the desired working life. Yet other additives have been used in compounds for the aircraft industry to produce a number of desirable properties, among these being improved high-temperature resist-

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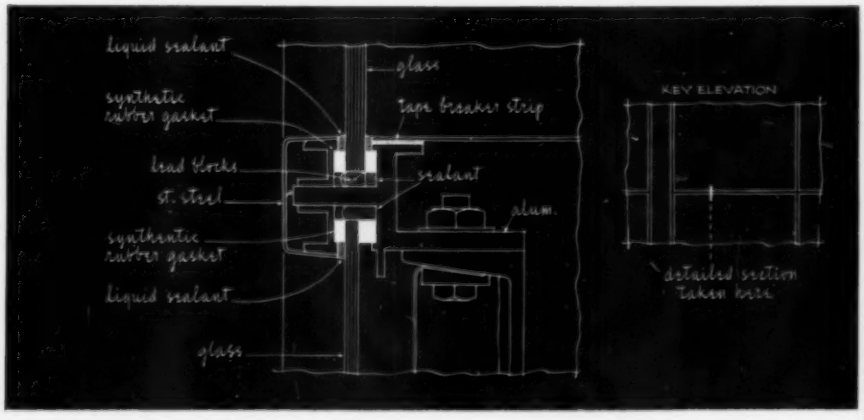


Detail (right) *indicates recommended locations for liquid-polymer sealants and synthetic-rubber gaskets at typical mullion of glass curtain-wall sealing system.*

ance. The choice of these additives is governed to a great extent by the properties desired by architects. The liquid synthetic-rubber base, together with fillers and additives, constitutes one part of a two-part compound. The second part is the curing agent.

Each part, separately, of this two-part compound is stable for periods in excess of one year. Immediately prior to use, the two parts are thoroughly mixed in the proper proportion, giving a compound with two to six hours of working life, which will convert to a rubber in 24 to 48 hours at 75F. This short working life does not limit the use of the compound, for the compound, after mixing, can be refrigerated at deep-freeze temperature, thus postponing the conversion for periods of up to one month. When ready to apply, the compound need only be thawed for one hour at 75F before using. The deep-freeze storage in no way alters the final properties.

The two-part compound is available in properly weighed proportions to give one quart, one gallon, or five gallons of mixed compound. Equipment is available for mixing the above quantities in separate batches which may then be transferred directly to calking tubes. One method which works satisfactorily for the one-quart or one-gallon quantity is to add the accelerator to the polymer base and then stir the batch for five minutes using a low-speed paint stirrer. It is important that no streaks of curing agent be apparent after mixing, since this indicates uneven distribution of curing agent and will result in a poor and nonuniform rubber compound.

The conversion of the properly mixed compound to give a rubberlike material requires approximately two days at a temperature of 75F. The mixed compound when applied to various surfaces will, when cured, give excellent adhesion to surfaces which include—among others—aluminum, steel, glass, various stones, concrete, etc. The rubber and the adhesive bond are unaffected by outdoor elements such as driving rain, hurricane winds, and temperature ranges varying from —100F to over 250F. The polymer structure is responsible for many of its excellent properties. The polymer is not affected by oxygen or ozone; this accounts for the fact that the cured polymer is essentially unchanged after outdoor aging for more than 10 years.

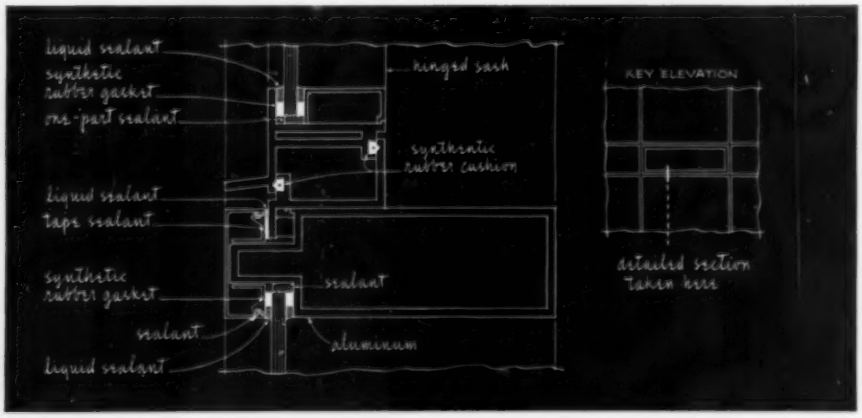
A summary of the handling characteristics and physical properties developed by the cured compounds is shown *(Table I)*.

Synthetic-rubber-based compounds are more expensive than so-called conventional calking compounds. This stems from many factors such as the cost of raw materials, the use of elaborate polymerization equipment, polymer control testing, and research to yield a constant controlled product. However, cost has never been a deterring factor when measured against long-term performance. It is only necessary to review the performance of synthetic-rubber compositions over the years to realize that the criteria for the selection of these polymers have been based on satisfactory performance for long periods.

TABLE I—Properties of Polysulfide Synthetic-Rubber Compounds

Available colors: Generally buff, grey, black and aluminum
Set time at 75F: 2 to 6 hr
Time to complete cure at 75F: 24 to 48 hr
Ultimate tensile strength: 250 psi[a]
Elongation at break: 200%[a]
Shore-A hardness: 20 to 60[a] depending on choice of fillers
Adhesion in shear: Approximately 200 psi[a]
Adhesion in peel: Minimum of 25 psi[a]
Water absorption: 0% after 4 days immersion at 75F
Service temperature: —100F to +250F

[a]Conducted on cast-sheet specimens cured for 24 hr at 75F. Standard ASTM test procedures for rubberlike materials were used for testing.



Detail (left) *shows recommended locations for sealants, gaskets, and cushions at ventilating window and mullion of glass curtain-wall sealing system.*

Stainless-steel panels of New York's Socony Mobil Building (above) *were calked with polysulphide synthetic-rubber compound before installation.* Photos: American Iron and Steel Institute

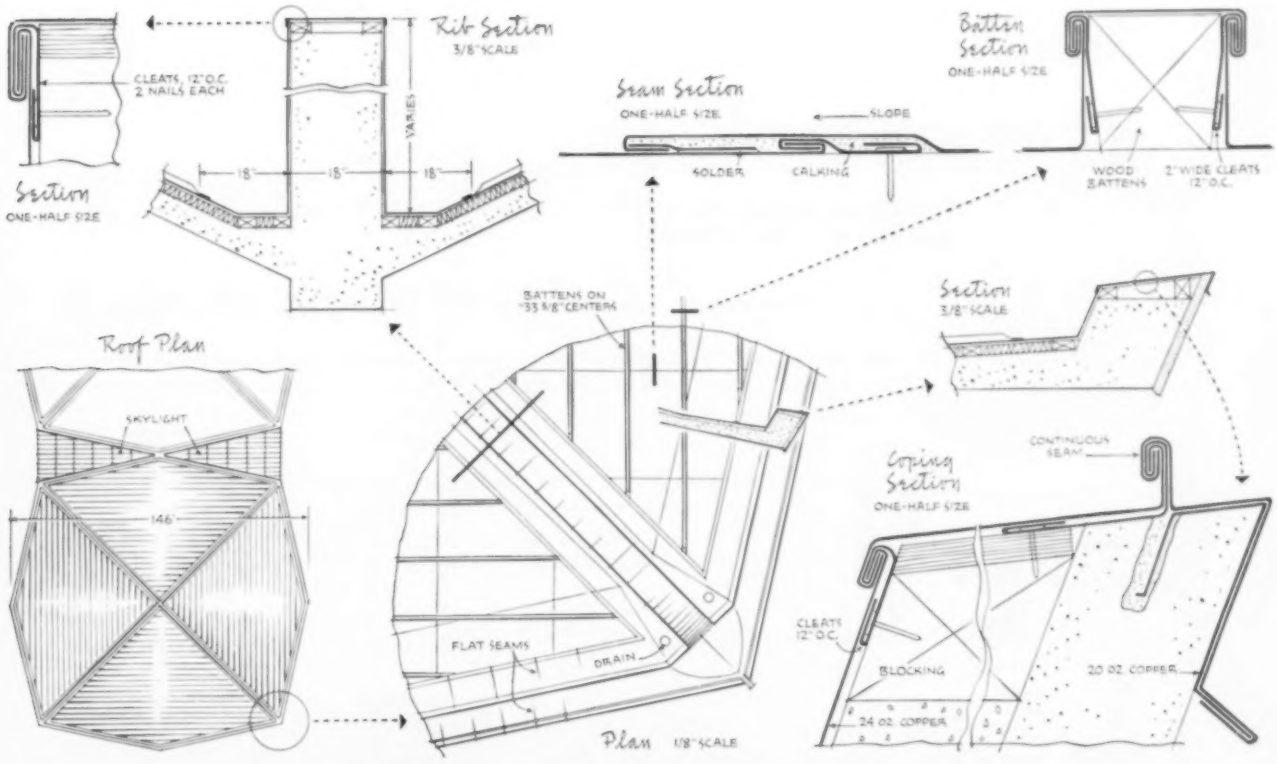
copper-sheathed domes

The new Airport Terminal Building at Lambert Field, St. Louis, was dedicated this spring. One of several remarkable uses of material in this unique structure, consisting of three-intersecting barrel-vaulted sections with six intersecting dormer arches, is its copper roofing. According to the Copper and Brass Research Association more than 50,000 sq ft of cold-rolled sheet copper, using batten-and-seam construction, was required to cover the roof. (Sections connecting the three primary units of the roof are glass skylights.) In addition to providing excellent protection against the elements, copper was specified because of the monumental character of the building. In a short time, the entire surface will acquire a blue-green patina and the roofing may actually be expected to outlast the structure that it protects.

The Terminal Building is approximately 415 ft long, 120 ft wide, and has a maximum height of 32 ft. The roof was constructed of thin-shell concrete, over which an insulated plywood deck was applied. Each roof section rests on four pendentives, thus eliminating all interior columns in the main concourse.

Minoru Yamasaki, while a principal of the architectural firm of Hellmuth, Yamasaki & Leinweber, designed the Airport Terminal Building. (He provided the large areas of glass and the vaulted arches to convey the impression of flight.) William C. E. Becker was Structural Engineer; Roberts & Schaeffer acted as Consultants for the concrete shells. Copper roofing was installed by Mound Rose Cornice & Sheet Metal Works.

Detail of pendentive at intersection of two barrel vaults (above). *Section at left was later filled with glass. Sheet-metal workers apply 20-03 cold-rolled sheet copper in batten-seam construction* (right).



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by Ben John Small

spec small talk

weasel's grandfather

You specification writers know perfectly well that you have been guilty of writing a grandfather clause here and there in your specifications, but do you know the origin of the term? The 15th Amendment to the Constitution of the United States made it illegal (1870) for any State to deny any citizen the right to vote because he had once been a slave. But many former slaveholding States found ways to evade the provisions of the Amendment. One method was to provide in a State Constitution that none could vote unless his forebears had the right to vote in 1867. The name "Grandfather Clause" was first given to laws of this type. Later it became a general name given to similar laws or legal schemes by which former slaves were barred from the right to vote. While we are on this subject, how about the expression "weasel words"? These are words that destroy the force of a statement by equivocal qualification, as a weasel ruins an egg by sucking out its contents while leaving it superficially intact. See you in court, friends.

taking the cure

In a recent study made by the Asphalt Tile Institute, it was found that concrete-curing compounds are being used more frequently in certain types of construction work. Some of these compounds, when applied to concrete subfloors, have proved to be injurious to asphalt tile. The Institute, therefore, has added the following note of warning to its current Recommended Specifications for the Installation and Maintenance of Asphalt Tile.

Caution: As some concrete-slab curing compounds can be injurious to asphalt tile, especially if they contain solvents, it is recommended that you consult the manufacturer of the tile before installing it on such a treated surface.

interior trim

This piece concerns itself with the care and feeding of interior trim. Where do I look for such dope? The Architectural Woodwork Institute, of course. If, after spending so much of your client's money on good wood you are still unhappy with the results, perhaps a little more prenatal care will help. Pay attention now; absorb these pearls of wisdom and specify in your own magnificent prose:

. In a building under construction, the relative humidity will average higher than it will in an occupied structure because of the moisture that evaporates from wet concrete, concrete blocks, brickwork, plaster, and even from structural wood members. The average temperature will also be lower, because workmen prefer a lower temperature than is agreeable in an occupied building. Under such conditions, interior woodwork tends to attain a higher moisture content during an advanced stage of construction than later, during normal occupancy. Before any interior finish is delivered, the outside doors and windows should be hung and in place so that they may be kept closed at night and in this manner hold the conditions of the interior as close as possible to the higher temperature and lower humidity that ordinarily prevail during the day. If this is not feasible, temporary closures should be provided. Such protection may be sufficient during dry, summer weather, but during damp or cool weather it is highly desirable that some heat be maintained, particularly at night. Whenever possible, the heating plant should be placed in operation before the interior trim goes in. Portable heaters may be used. Temperatures during the night should be maintained at about 15F above outside temperatures and not be allowed to drop below 70F, approximately, during the summer or 62F to 65F when outside temperatures are below freezing.

Carey coup

All too infrequently, a document crosses my desk which excels as a first-rate aid to specifiers, young and old. Such a document is Philip Carey's reference list for asphalt and asbestos magnesia products. This list takes a triple threat approach such as: (1) list of Carey products by major classifications in bold type and a breakdown showing each product; (2) products indexed by standard specifications (Associations and Governmental Agencies); (3) product group including reference to standard specifications plus comments. Good for Carey, because I believe that building product manufacturers who have extensive lines cannot do too much for the specifier in creating crystal clear score cards of their products.

syneresis

You're wrong! It has nothing to do with illness. I am talking about cracks in concrete which develop very soon after placing and finishing, sometimes within a matter of minutes, even under a film of water. These, dear students, are ascribed to plastic shrinkage caused by syneresis or by a false set. I know you know but just the same syneresis has been described as follows:

"When hydrochloric acid is added to sodium silicate solution, silica gel is precipitated. This freshly prepared gel is unstable and begins to shrink, expelling water from the mass, undergoing a process known as syneresis. During syneresis no volume change occurs in the whole system (gel + water), and the process consists simply of the expulsion of free liquid enmeshed in the gel, the shrinkage of the gel reducing the available pore space."

The end is not yet in sight. Watch this page for more exciting hot flashes.

school-site sizes

My favorite educational consultant writes:

Dear Ben: I enjoy **spec small talk** so much that I hope you will find some space soon for specifications on site size. Just recently I have had occasion to summarize sites of some recently planned high schools throughout the nation. These are schools in which our organization played an important part in site selection.

The list seems to me to be very impressive. When approximately 50 communities in several widely scattered states make decisions to buy 40 to 100 and more acres for senior high school sites, they apparently are stressing the importance of education in community progress and particularly the significance of the proper use of the out-of-doors in the achievement of important educational objectives. It seems to me that the rise in specifications for sites for secondary schools during the past 50 years represents a corresponding advance in the importance of secondary education in American life.

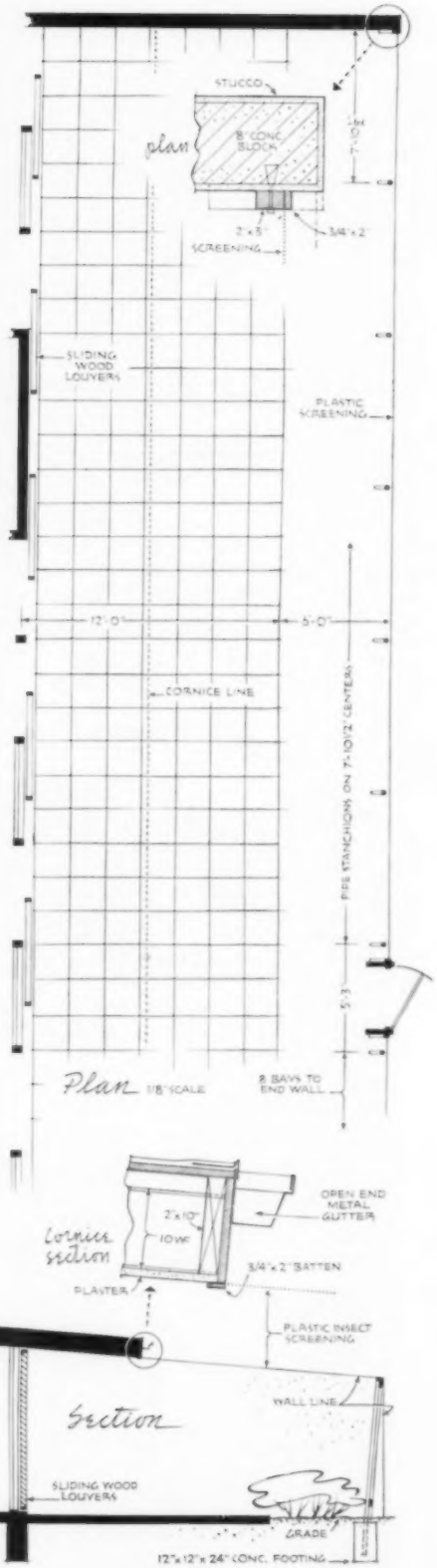
Early in 1900, high-school sites were frequently limited to 10 acres or even less. At the quarter of the century, 20 acres were frequently dedicated to senior high-school purposes. At the half century, you will note that the purchase of 50, 60, 70 acres (and more) does not appear to be a rare event. Apparently American communities are becoming land-wise with respect to their specifications on school sites. The sad experience of communities that put their high schools on small sites has apparently become widely known. It is most reassuring to find today's boards of education protecting school-plant investments by providing enough land to safeguard against unforeseeable future inroads and to provide for the expansion which is inevitable in the secondary school field.

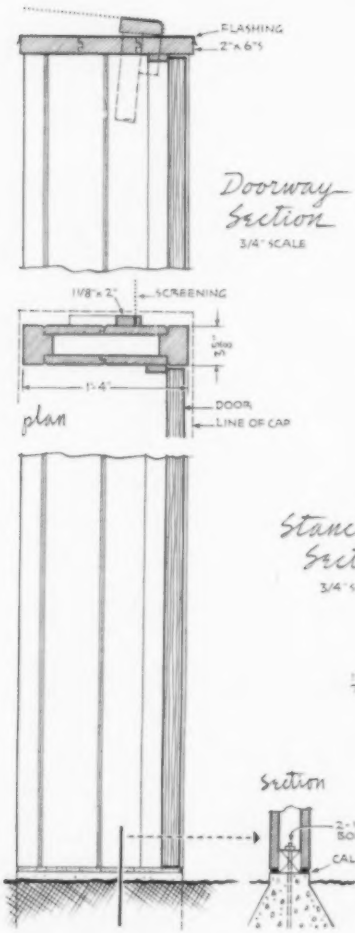
N. L. ENGELHARDT, SR.

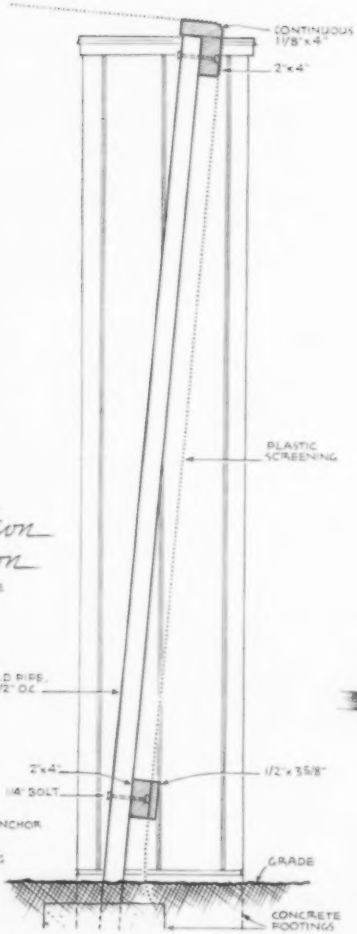
Enclosure: List of high-school sites "with more than 40 acres of land." Sorry, Nick, I really don't have space for the list but I do hereby invite readers to write to me for it. —B.J.S.

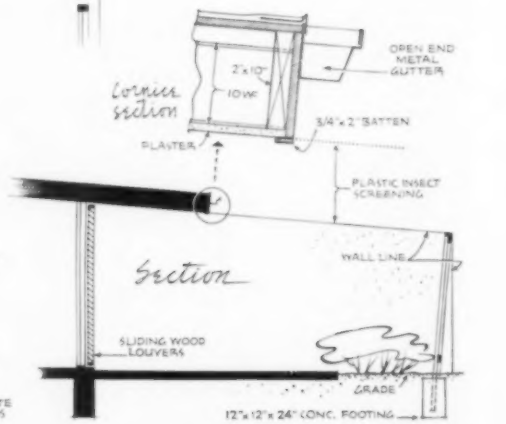
screened terrace

ALEXANDRE GEORGES



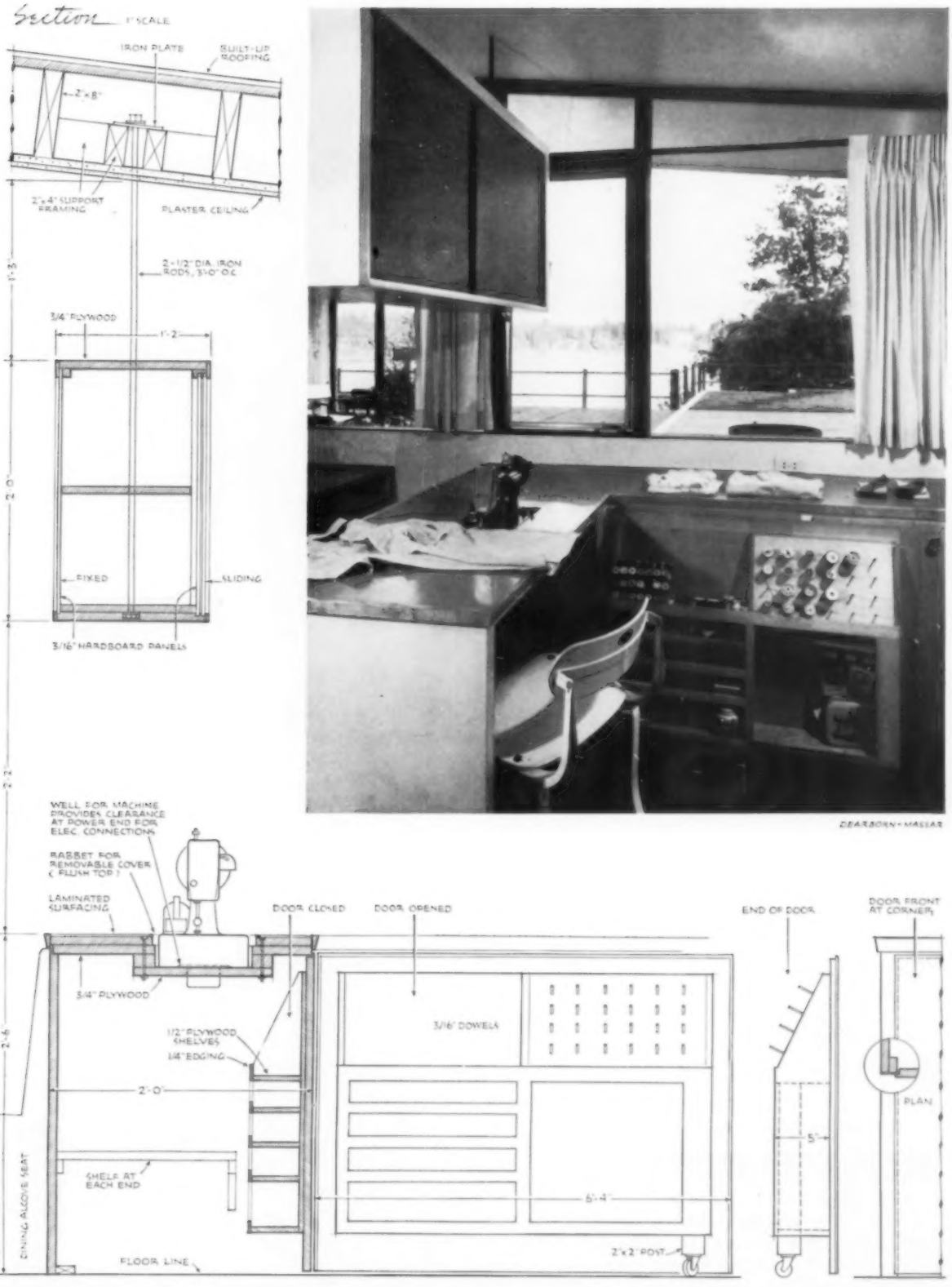






HOUSE, Redington Beach, Fla.
Rufus Nims, Architect

sewing cabinet



DEARBORN-MASIAR

HOUSE, Tacoma, Wash.

Robert Billsbrough Price, Architect

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Bert Schnell

Two examples of designed storage covering a quarter-century span. Storage-divider (left) in Techbuilt house (1950) by Carl Koch; modular storage unit (right) by Le Corbusier, Pierre Jeanneret, and Charlotte Periand, shown at the 1929 Paris Salon d'Automne.

Louise Sloane

designed storage

Dating from the first cupboard built into the earliest house by the self-made architect-owner, what we now call the storage unit has always been the "furniture" of the architect. Its development in the present century has been paced by the ingenuity of the designer and the introduction of new materials to supplement that creativeness.

Illustrating the current trend toward specialized storage are the pages that follow. Designer J. R. Davidson and Architects Sherwood, Mills & Smith have both utilized the storage unit as separator between room areas, designing the unit as multifunctional and each interpreting its detail in the form best suited to its surroundings.

Architects Kenneth Lind, and the late Burton A. Schutt, in association with Harold W. Levitt, treat the bath/dressing room as a giant walk-in wardrobe, utilizing all possible space for maximum storage, designing as well for beauty of decor.

Four examples of special-purpose storage show each architect's design tailored to the personal interests of the client. They include: wine-and-liquor storage by Cull, Robinson & Green; sporting-equipment storage by Arnold G. Gangnes; record-album storage by Richard Stadelman; and garden-equipment storage by Anthony Thormin.

Let the traditionalists and the modernists war as they will about esthetics, incontrovertible is the satisfaction of the client whose house is provided with "a place for everything"—and lots of it! Designed storage, the concept of the modern architect, emerges triumphant over the inadequacies of the dated, dark, and cluttered closet of the past.

designed storage

Photos: Julius Shulman

Multipurpose storage divider separates entry hall and living room. Made of American walnut, the unit contains radio and record player, affords hidden storage in three lower cabinets. Sliding panels of natural bass woven wood, in blue-painted frames, open or close on metal grooves. All three narrow drawers have hinged fold-down fronts, pull out to form a desk surface. When the hall and the living room are to be used as one room, two-thirds of the lower cabinet may be removed entirely, and used as a buffet server. Indirect lighting, with slots for down light, is installed in the canopy, as well as in adjacent bookcases.

data

cabinetwork

Storage Unit: custom designed, built on job.

Sliding Panels: bass woodweave/ pine frame painted blue/ "Temlite"/ Holland Shade Co., 999 Third Ave., New York, N. Y.

furniture

Settee: before fireplace/ Dunbar Furniture Corp., Berne, Ind.

lighting

Indirect: "Slimline"/ General Electric Co., Nela Park, Cleveland, Ohio.

walls, ceiling, flooring

Walls: plaster/ painted pale blue-orchid.
Ceiling: acoustical plaster/ painted pale blue-orchid.
Floors: loop carpeting/ gray.

client	Joe R. Osherenko
location	Beverly Hills, California
designer	J. R. Davidson

client | Christopher H. Knoll

location | New Canaan, Connecticut

architects | Sherwood, Mills & Smith

data

cabinetwork

Storage Units: architect-designed/ plane-sawn walnut veneer "Algoma" grade plywood/ exposed edges, V-stripped/ rubbed-down boiled linseed oil natural finish.

Drawer Slides: #306/ Grant Pulley & Hardware Co., 31-85 Whitestone Pkwy., Flushing, N. Y.

lighting

Strip lighting: controlled by "Luxtrol" dimmer switch/ Superior Electric Co., Bristol, Conn.

Photos: Robert Stahman

Conceived as part of the structure of the house, storage unit separates entry from dining room. On the entry side, there is a coat closet; space for games, movie equipment, etc., located near the living room end; as well as a card-table closet. On the dining-room side, storage for dinnerware and linens is conveniently provided. The unit is of walnut, equipped with piano hinges and magnetic catches. Lighting throughout is controlled by a master dimmer-switch located on the cabinet.

designed storage

client	Nat Goldstone
location	Los Angeles, California
architect	Burton A. Schutt
associated architect	Harold W. Levitt

Bath/dressing-room storage, with generous space provided for bath linens as well as for personal effects. Natural woods, distinctive hardware, fully carpeted floor, contribute to the lavish look. Sliding shoji screens and shutters, imported from Japan, afford privacy as well as contrasting textures.

Photos: Julius Shulman

data

cabinetwork

All: architect-designed, custom-built/ Harold Anderson, 816 Moraga Dr., Los Angeles, Calif.

Marblework: tub, counters/ Edmund B. Lohr, 2763 Santa Ana St., South Gate, Calif.

plumbing

All: American-Standard, Pittsburgh, Pa.

windows

Sash: steel/ Druwhit Metal Products Co., 4368 E. Bandini Blvd., Los Angeles, Calif.

client	Manuel Seff
location	Beverly Hills, California
architect	Kenneth N. Lind

Photos: Julius Shulman

data

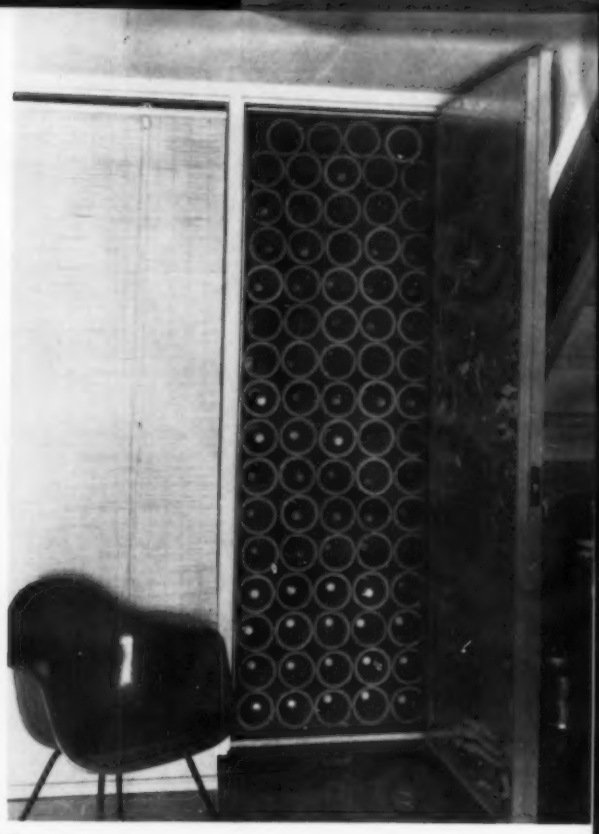
cabinetwork

Storage Units: architect-designed/ Light Lauan Philippine mahogany plywood/ United States Plywood Co., 55 W. 44 St., New York, N. Y.

Surfaces: The Formica Co., 4615 Spring Grove Ave., Cincinnati, Ohio.

Walk-in bath/dressing-room, with lavatory and dressing table built-in; engineered storage for all clothing and linens. The monochromatic scheme is designed to harmonize with the light Lauan Philippine mahogany of the paneling. Cabinets are equipped with adjustable clothing rods and shelving. Fluorescent lighting is designed for flexibility. The architect's intent was to provide maximum storage space, yet not sacrifice beauty of decor to utility.

designed storage



1

Wine-and-liquor storage closet in the house for Edward S. Brackett, Jr., Seekonk, Mass., by Cull, Robinson & Green, Architects. Bottles stored in drainage tiles, piled two deep, at a slight angle, from floor to ceiling. Door is equipped with a lock. Behind the adjacent bamboo blind is a recessed snack bar, with refrigerator and sink.

2

Sportsman's storage closet in the house for George Veith, Sequim Bay, Wash., designed by Architect Arnold G. Gangnes. Custom-designed of cedar, with yellow-painted sliding doors, to hold guns, ammunition, fishing tackle, and clothing for hunting and fishing. The closet is placed at the rear entrance to the house, on a stair landing. Adjacent outside lockers in carport hold motors, boat gear, etc.

For his own house in Las Vegas, Nev., Architect Richard Stadelman designed a record-and-book storage unit that is compact and functional. Each record album is placed, title-side easily read, on an individual plywood shelf, for easy individual access. Additional storage is in the cabinet below.

3

data

2 Sliding Doors: "Novoply"/ U. S. Plywood Co., 55 W. 44 St., New York, N. Y.; **Door Tracks:** "Washington Line"/ Washington Steel Products, Inc., Tacoma 2, Wash.

3 Cabinetwork: U. S. Plywood Co., 55 W. 44 St., New York, N. Y.; **Stain:** "Dutch Boy"/ National Lead Co., 111 Broadway, New York, N. Y.

4 Sink and Ledge: Stainless Steel. **Surfaces:** The Formica Co., 4615 Spring Grove Ave., Cincinnati, Ohio; **Cabinetwork:** architect-designed/ executed by Incorvaia & Omilyak, Los Angeles, Calif.

4

Garden-equipment storage unit in the patio of his own house in Los Angeles, Calif., designed by Architect Anthony Thormin. The unit has Formica work surfaces, stainless-steel sink, sliding doors of gumwood. It serves both for storage of garden tools and as a flower-arranging center.

Modular Chests: "Legato" group/ rare quartered-teak veneer in natural or dark wax finish/ brass hardware and legs/ modular units may be used individually or combined as desired/ designed by Harold M. Schwartz/ **Romweber Industries, Batesville, Ind.**

Lounge Chair: foot-rest hidden when chair is upright/ patented mechanical reclining device is all-steel, springs No-Sag, upholstered construction foam rubber, rubberized hair, felted cotton/ width 35", over-all height 40", depth 35"/ all-nylon fabric in black and white, charcoal, claret red, sage green, toast, turquoise/ **retail:** $129; in Duran-and-linen fabric, in six colors, $119/ designed by Russel Wright/ **Sidney Chairs, Inc., Detroit, Mich., and Altoona, Pa.**

Occasional Chair: (left) tapering stretcher, contour back, carved arms/ foam-rubber construction, oatmeal plaid weave fabric/ finish "Amber" on solid mahogany; **Portable Bar:** (below) beige Carrara marble top, mahogany frame in "Resin" finish, brass-trimmed wheels/ bottle cabinet/ plastic-lined drawer/ **Harvey Probber, Inc., 136 Fifth Ave., New York, N.Y.**

Counter Bar: (below) on bartender's side, two hinged and two sliding doors cover two pull-out trays and two adjustable shelves/ plastic-top mixing surface covers access ports for ice bucket and pail/ of walnut with cane/ 48" long x 27" x 38" high/ designed by Donald Irving Assoc./ **Georg Jensen, Inc., Fifth Ave. at 53 St., New York 22, N.Y.**

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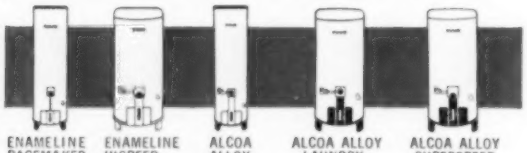

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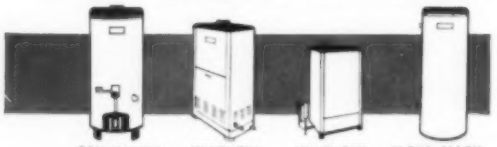

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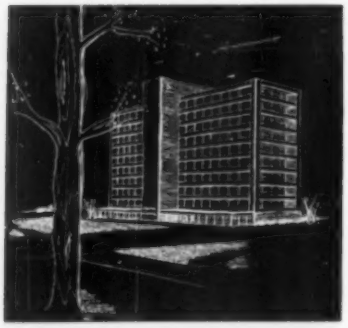

Because the vertical-transportation system is a vital traffic artery in a hospital, its proper design is especially important. To help architects in planning elevator facilities, Otis Elevator Company has issued a new booklet, The Modern Hospital and Its Elevator Needs.

The booklet opens with a checklist of essential factors to consider in laying out elevator locations, numbers, and duties; these requirements—determined in part by the type and size of hospital, types of elevator traffic, methods of distributing supplies and food, and future-expansion possibilities—are then discussed in further detail. Recommendations for the selection of elevator equipment and control systems are included; data sheets provide necessary design information, dimensions, and drawings.

1. The Modern Hospital and Its Elevator Needs (A-381), 24-p., Otis Elevator Co., 260 Eleventh Ave., New York 1, N. Y.

Editor's Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.

air and temperature control

143. Tonrac Refrigerating Machine (1426), 8-p. publication containing information on single-stage, hermetic, centrifugal refrigerating machine. Outines features in design and construction of machine; describes component parts. Photos; isometric cut-away drawing. American Blower Corp., Detroit 32, Mich.

144. Carrier Automatic Absorption Refrigeration, AIA 30-F-22 (16C-8), 36-p. booklet presenting completely automatic absorption-type refrigeration machine designed to supply chilled water for large air-conditioning systems. Explains advantages of absorption-type unit in installation costs, operating expenses, performance, and size of unit; describes operation of machine. Includes engineering data for design and installation of refrigeration system. Photos; drawings; specifications. Carrier Corp., Syracuse 1, N. Y.

145. Airtemp Air-Conditioning Systems (L-115), 24-p. bulletin on year-round air-conditioning equipment for homes, stores, and offices. Describes central-station equipment as well as package units for summer cooling and winter heating; also gives data on condensers, cooling coils, and fan-coil units. Photos; drawings; specifications. Airtemp Div., Chrysler Corp., Dayton 1, Ohio.

146. Air-Handling Units (E.M.-G5622), 44-p. engineering manual containing information on air-handling units for commercial, industrial, and residential air conditioning. Describes both vertical and horizontal conditioners; provides complete selection data and performance tables for heating and cooling equipment. Drawings; engineering-data charts; specifications. Drayer-Hanson, Inc., 3301 Medford St., Los Angeles 63, Calif.

147. Remote "Roomaire" Conditioner, AIA 30-F-2 (7754A), 6-p. brochure featuring remote-type room air conditioner for multiroom installations such as hotels, offices, apartments, and schools. Lists advantages of compact unit with individual temperature control; describes operation of conditioner. Includes dimensioned diagrams; tables of heating and cooling capacities; specifications. Young Radiator Co., Racine, Wis.

construction

U. S. Directory of Modular Building Materials, 84-p. listing of manufacturers of modular construction materials. Presents makers of clay and concrete products according to geographic region; also includes manufacturers of other masonry materials, flue lining, glass blocks, windows, partitions, and ceiling materials. Directory is arranged so that new manufacturers' names can be added; appendix gives bibliography of literature on modular materials and drawings. Available only on direct application to American Institute of Architects, 1735 New York Ave., N. W., Washington 6, D. C. $1.

272. Rilco Deck, AIA 19-B-3, 4-p. folder presenting data on solid-timber roof deck formed of 3⅝" planks spiked together. Outlines physical properties of roof deck which also serves as finished ceiling; provides photos of several installations. Rilco Laminated Products, Inc., 2591 First National Bank Bldg., St. Paul 1, Minn.

273. Technical Data on Southern Pine: Fastenings for Lumber, AIA 19-A-1 (7), 16-p. bulletin explaining mechanical methods of fastening Southern pine. Covers nails and spikes, wood screws, lag screws, bolts, drift bolts, and timber connectors; provides necessary design information, including tables of lateral and withdrawal loads. Also contains data on framing anchors and power-driven studs; lists recommended fasteners for common uses. Drawings; details. Southern Pine Assn., Canal Bldg., P. O. Box 1170, New Orleans, La.

274. Gypsum Roof Tile, AIA 4-E-6, 4-p.
275. Pyrobar Gypsum Partition Tile, AIA 10-D, 4-p.

Two bulletins containing technical data on precast gypsum-tile products. First folder describes 3" short-span roof-deck units, of reinforced solid gypsum, usually attached to steel subpurlins by nailing; second folder features gypsum partition tile with indented surfaces to receive plaster. Both contain design-data charts, typical details, and specifications. U. S. Gypsum Co., 300 W. Adams St., Chicago 6, Ill.

276. Architectural Woodwork: Moldings and Trim, AIA 19-E-3 (8), 8-p. booklet giving data on wood moldings and trim for interior and exterior applications. Lists portions of buildings lending themselves to decorative trim; suggests proper wood for each type of molding. Provides detail drawings and photos of several installations; gives guides for design and specification of wood trim. Architectural Woodwork Inst., 332 S. Michigan Ave., Chicago 4, Ill.

277. Fireplace Dampers, AIA 14-E (VC-100), 12-p. pamphlet presenting information on throat dampers designed for contemporary fireplaces. Shows damper with lintel support, made especially for fireplaces with one or more sides open; illustrates steel-plate damper with built-in expansion joint; includes cast-iron damper with steep slope for better funneling of smoke. Details of fireplace construction and damper installation; design charts; drawings. Bennet-Ireland, Inc., 12 Exchange St., Norwich, N. Y.

278. Blumcraft Aluminum Railings (M-56), 44-p. catalog illustrating stock aluminum-railing sections for assembly by local metal fabricators. Presents low-cost, trapezoidal-section railing for use in place of pipe rail; shows several types of railings for featured locations. Provides drawings, details, and dimensions for each style; specifications. Blumcraft of Pittsburgh, 460 Melwood St., Pittsburgh 13, Pa.

★ **279. Vizupoles: Flexible Partitioning** (365), 28-p. brochure featuring flexible partitioning system designed mainly for commercial use, but adaptable to residential and office partitions. Sketches show vertical supports—held in place between floor and ceiling by tension device—and attachment of shelving, brackets, or panels; also illustrates semipermanent supports for heavier loads, which lock into floor and ceiling plates. Includes data on adjustable floor-to-ceiling partitions; gives drawings and dimensions of supports and fittings. L. A. Darling Co., Bronson, Mich.

280. Flexicore Precast-Concrete System, AIA 4-K, 8-p. pamphlet on precast-concrete floor and roofing system. Outlines advantages of prestressed, hollow-core concrete slabs; provides data for design of floors and roofs. Details show use with steel, reinforced-concrete, and load-bearing structures; diagrams indicate installation of plumbing, air-conditioning, and electrical equipment. Photos; charts; specifications. The Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio.

281. Heat-Transmission Clay-Conduit Structures (56), 20-p. booklet on clay conduit for insulated underground steam, hot-water, and refrigeration piping. Provides information on full-round conduit with extra-heavy wall thickness and special underdrain which lowers water table; also describes half-round conduit. Presents data on water-resistant glass-fiber insulation. Design-data charts; details; specifications. Heat Transmission Conduit Co., 2300 Payne Ave., Cleveland 14, Ohio.

282. Kaiser Industrial-Building Products, AIA 12-C, 16-p. bulletin on aluminum sidings and roofing. Describes ribbed embossed siding, corrugated industrial sheeting, and field-fabricated sandwich walls; gives details, dimensions, and loading tables for each material. Photos; specifications. Kaiser Aluminum & Chemical Sales, Inc., Palmolive Bldg., 919 N. Michigan Ave., Chicago 11, Ill.

283. M-Floors, AIA 17-A (M-56), 24-p. catalog giving data on cellular, steel floor panels. Provides section-property tables and load tables for several types of sections; includes specifications for installation of cellular-steel subfloors and roof decks. Explains use of cellular sections as electrical raceways; also describes cellular panels with perforated deck backed up by sound-absorbing material, for use as finished ceiling. The R. C. Mahon Co., Detroit 34, Mich.

284. Mills Metal Partitions, AIA 35-H-6 (56-T), 20-p. catalog on metal toilet compartments, hospital cubicles, and shower units. Gives drawings, dimensions, and specifications for several types of toilet compartments and shower/dressing-room units; provides suggested floor plans for showers and rest rooms. Data on standard hardware; chart of 20 colors available in porcelain-enamel or baked-enamel finish. The Mills Co., 967 Wayside Rd., Cleveland 10, Ohio.

285. Ramset Fastening System, AIA 17-F, 8-p. publication on powder-actuated system for fastening into concrete or steel. Describes operation of fastening tools; lists possible applications of system. Dimensioned, full-size photos show fasteners grouped with proper-size tool. Ramset Fasteners, Inc., Division of Olin Mathieson Chemical Corp., 12117 Berea Rd., Cleveland 11, Ohio.

286. DS Bolts, 4-p. folder presenting new patented fastener for weatherproof bolting of corrugated roofing and siding. Shows how system enables one man to install corrugated sheeting; gives dimensioned drawings of bolts and accessories. Delbert L. Smith Co., Inc., 525 Chartiers Ave., McKees Rocks, Pa.

287. Kindorf Supports for Cable, Conduit, and Bus Duct, AIA 14-G (C-1), 12-p.

288. Fluorescent Lighting Supports, AIA 31-F-290 (G-1), 6-p.

Two booklets containing information on supports for electrical-distribution and fluorescent-lighting systems. First bulletin shows patented method for suspending single or multiple runs of conduit or bus duct; also gives data on trapeze hangers for multiple runs of conduit. Drawings; dimensions; data on accessories. Second bulletin describes support for surface raceway and flush-mounted fluorescent fixtures; also shows suspension system for fluorescent fixtures only. Dimensions; description of fittings. The Kindorf Co., 1209 Columbus Ave., Pittsburgh 33, Pa.

doors and windows

348. Woodco Windows, AIA 19-E-1 (EZ-856), 8-p. brochure illustrating wood-framed awning windows. Outlines special features of extra-heavy sash and frames; gives construction details showing installation. Drawings; dimensions; specifications. Woodco Corp., 34 St. and Paterson Plank Rd., N. Bergen, N. J.

349. Ador Sliding-Glass Doors, AIA 16-E, 12-p. colored brochure illustrating all-aluminum sliding-glass doors. Describes construction of completely weathersealed doors; presents isometric drawings showing standard sections and special adaptor for double glazing. Photos; one-half scale details; specifications. Ador Sales, Inc., 2345 W. Commonwealth Ave., Fullerton, Calif.

★ **350. Houze Lo-Tran Glass** (L-2), 4-p. brochure featuring neutral-gray-colored window glass manufactured to meet Balanced-Brightness requirements of National Council of Schoolhouse Construction. Outlines special advantages of gray window glass; lists goals recommended for visual comfort and efficiency in classrooms. Color drawings show use of gray glass in side-wall windows shielded by roof overhangs, in classrooms with top-lighting panels, and in schoolrooms depending on electric lighting. Photos; physical properties of glass; wind-velocity tables. Houze Glass Corp., Point Marion, Pa.

351. How to Select and Specify Cold-Storage Door, 20-p. guide for choosing proper cold-storage door. Describes main types of cold-storage doors; reviews special considerations such as insulation, size of door, type of sill, protection from moisture and fire, and protection against hard usage. Photos and drawings; check list for specifying doors; recommended specifications. Jamison Cold-Storage Door Co., Hagerstown, Md.

352. Hinges for Modern Building, AIA 27-B, 8-p. bulletin containing data on selection and application of hinges. Describes door-control butt hinges and template butt hinges; gives information on hinges for wood, steel, and fire doors. Drawings; dimensions; charts of expected frequency of door operation and proper-size butt hinges for standard door sizes. McKinney Mfg. Co., 1715 Liverpool St., Pittsburgh 33, Pa.

(Continued on page 170)

PROGRESSIVE ARCHITECTURE, 430 Park Avenue, New York 22, N. Y.

I should like a copy of each piece of Manufacturers' Literature circled. We request students to send their inquiries directly to the manufacturers.

143	277	287	437
144	278	288	438
145	279	348	439
146	280	349	617
147	281	350	618
272	282	351	710
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276	286	436	

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Name _____

Position _____

Firm _____

Mailing Address _____

City _____ *State* _____

Coupon must be used by 8/1/56.

A.I.A. FILE NO. 15-M-1

DESIGN STUDY
NUMBER
2

Davidson
TYPE 2 Porcelain Facing Panels

SECURITY TRUST AND SAVINGS BANK
Billings, Montana

Architect: Bank Building & Equipment Corporation, St. Louis, Missouri; Mechanical Engineering, R. L. Prussing

General Contractors: Lowe Construction Co., Billings, Montana

Davidson Type 2 Porcelain Panels: — Distributed and Erected by: The Porcel Co., St. Louis, Missouri

Good creative design, planning and construction are the results indicated in the completed structure shown above. Results of the "finished job" begin with materials that offer compatibility with others and yet maintain freedom of design as well as economy to over-all construction costs. Davidson Architectural Porcelain for the building shown above was Type 2 Facing Panels in a ripple powder blue finish, which were mounted on steel framing and set at an angle.

Whether the application is porcelain facing panels or curtain-wall panels for new or remodeling use, you can rely on Davidson Architectural Porcelain Panels to offer unlimited freedom of design expression.

DAVIDSON ENAMEL PRODUCTS, INC.
1119 EAST KIBBY STREET • LIMA, OHIO

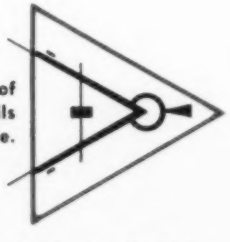
Member Producers' Council

Davidson

ARCHITECTURAL PORCELAIN

the modern building material . . .
engineered for Architects

See next page for study of porcelain construction details of the building shown above.



Watch for Design Study Number 3 which will appear in this publication in Sept.

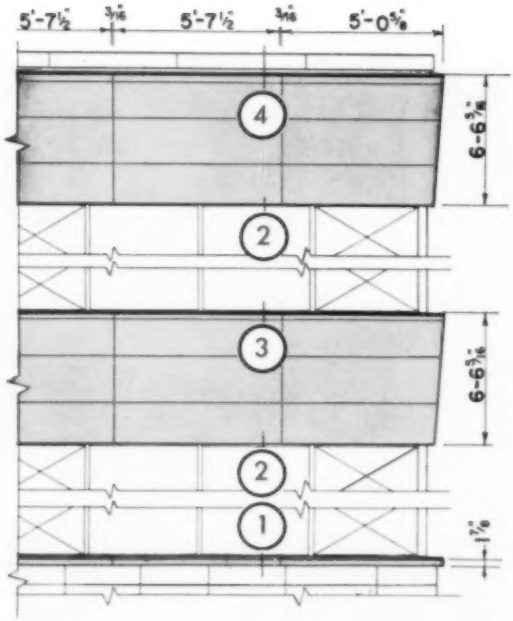
CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE

A.I.A. FILE NO. 15-M-1

CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE

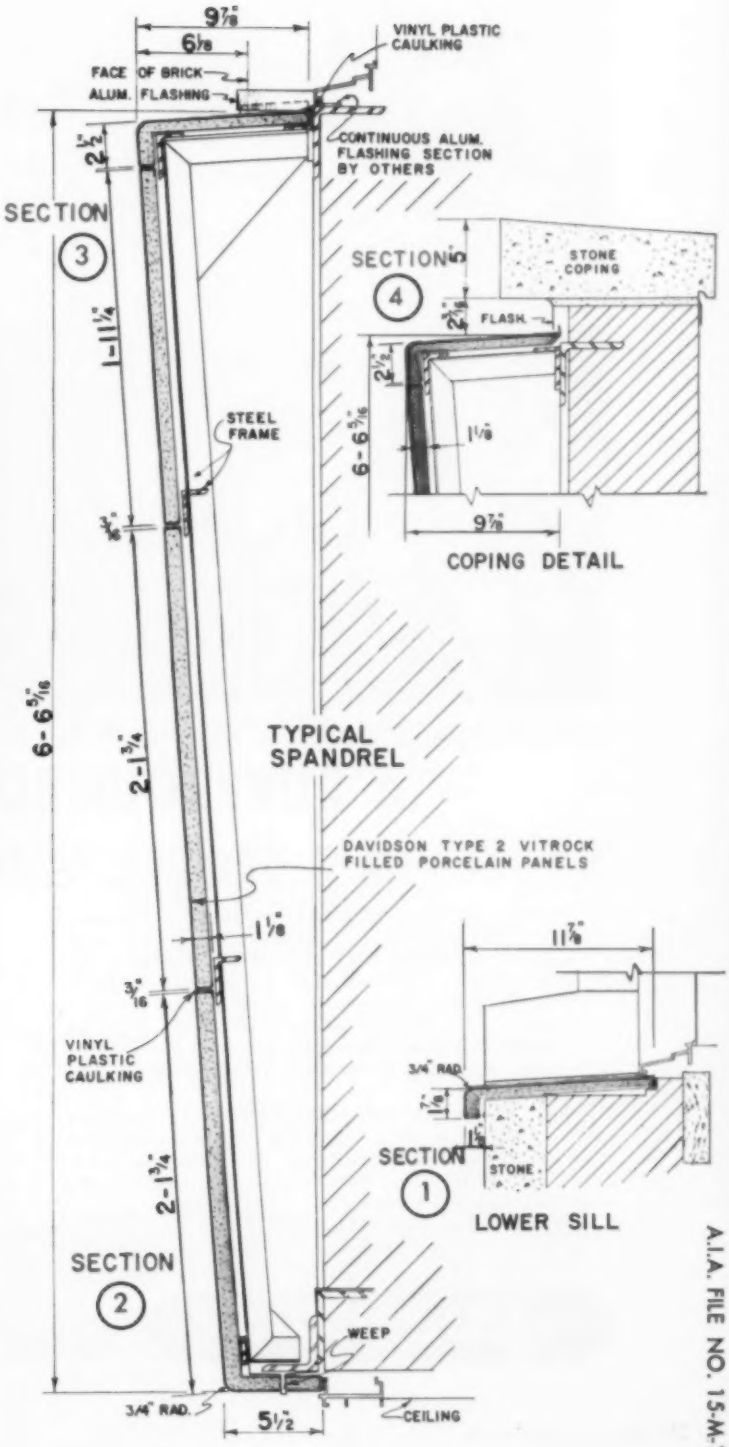
A.I.A. FILE NO. 15-M-1

CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE



DESIGN STUDY NUMBER 2

Davidson TYPE 2 Porcelain Facing Panels



DESIGN STUDY #2

DAVIDSON ARCHITECTURAL PORCELAIN

DESIGN & DETAIL STUDY OF ARCHITECTURAL PORCELAIN

Security Trust and Savings Bank, Billings, Montana

For further information on the application of Davidson Architectural Porcelain check and send for the following:

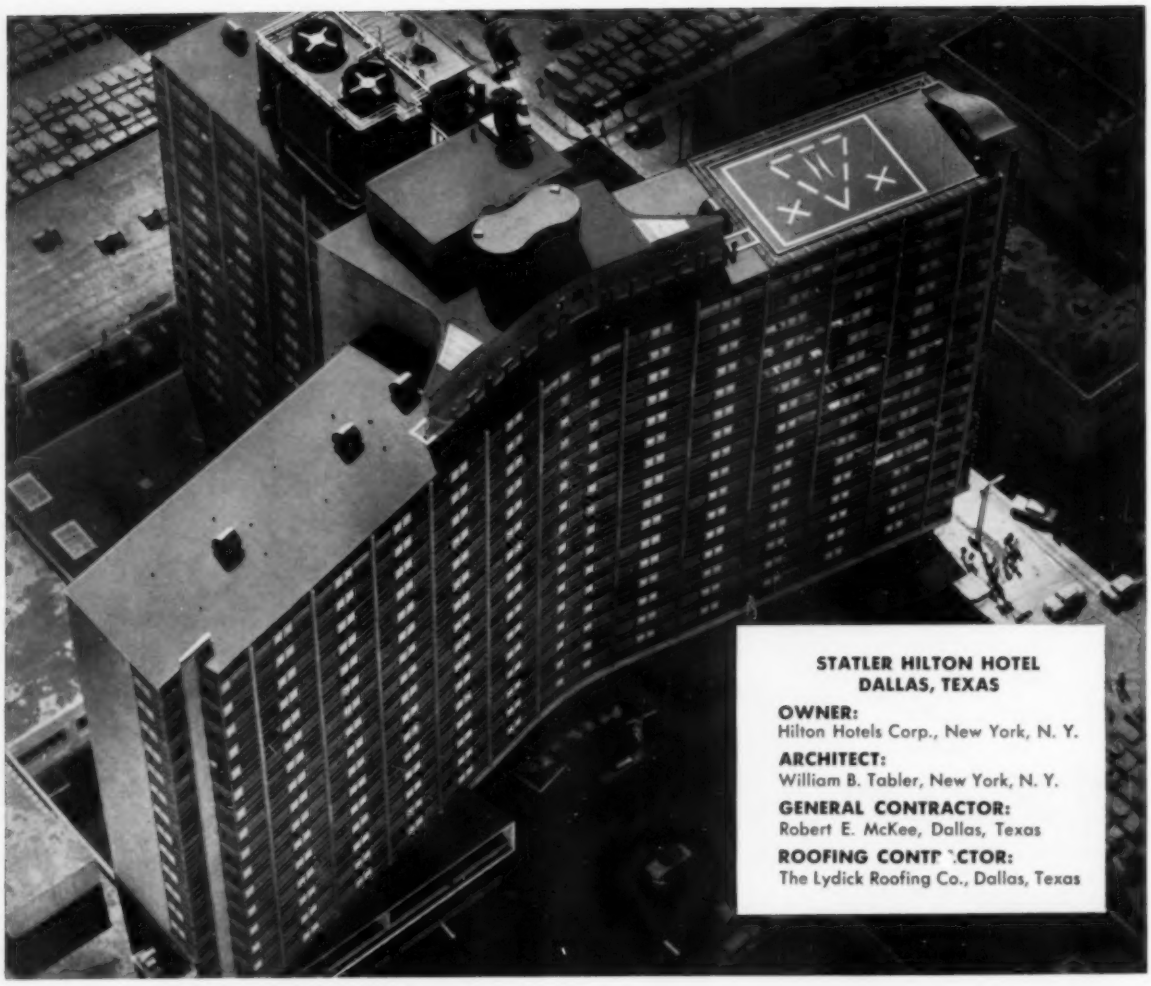
- ☐ Full scale drawings showing the application of Architectural Porcelain for the Security Trust and Savings Bank, Billings, Montana.
- ☐ Detailed, 16-page Architectural Catalog, 1956 Edition
- ☐ Porcelain Panels for Store Fronts
- ☐ Porcelain Panels for Shopping Centers
- ☐ Porcelain Panels for Schools
- ☐ File of Typical Construction Details
- ☐ Reference File Jacket on Architectural Porcelain
- ☐ Reprints of this Study #2. Quantity_____

DAVIDSON ENAMEL PRODUCTS, INC.
1119 E. KIBBY STREET, LIMA, OHIO

A.I.A. FILE NO. 15-M-1

CUT ALONG DOTTED LINE AND SAVE FOR YOUR FILE

A.I.A. FILE NO. 15-M-1



On the new Dallas Statler Hilton Hotel...

A RUBEROID BUILT-UP ROOF

Engineered to the job!

The Statler Hilton is the newest member of the family of fine Hilton hotels . . . and a striking, colorful addition to the fast-growing Texas skyline. On top of the Statler Hilton—63,000 square feet of Ruberoid Built-Up Roofings!

Here is an excellent example of the versatility of Ruberoid Built-Up Roofings in solving varied problems. The design of the Statler Hilton called for three separate roofs:

1. **A UNIQUE HELIPORT DECK** — Ruberoid specification #206 — Coal Tar Pitch and Tarred Felt overlaid with promenade tile — was selected to provide a roof that would stand up under rugged service conditions.
2. **COURT AND LOWER ROOF AREAS** — These areas, visible to hotel guests, required roofing that would harmonize with the over-all appearance of the hotel exterior. Ruberoid Specification #203A —Special Roofing Bitumen with green mineral surfacing was selected.
3. **HIGH SUPERSTRUCTURE AREAS** — Here, Ruberoid Specification #203—Coal Tar Pitch and Tarred Felt with gravel surfacing—was selected for its economy and proven record of long, trouble-free service.

No matter what *your* built-up roofing problem, there's a Ruberoid specification that will give you the answer. They're all explained in detail in the Ruberoid Built-Up Roofing Specification Book. It's your guide to the best in any type of built-up roofing. For more information write: The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.

see our catalog in S or write for copy

The RUBEROID Co. **Asphalt and Asbestos Building Materials**

"A result no other way obtainable"

unusual design produced economically with Rilco beams and arches

Katz Drug Store, Kirkwood, Missouri. Architects Kivett and Myers, Kansas City.

Rilco fire safe Laminated Beams are delivered on the job, machine finished, wrapped for protection.

"Although the economy was not the prime factor in the use of (Rilco Laminated Beams) it was, of course, a natural result and particularly welcomed when you thereby achieve a result no other way obtainable." The parentheses and underlining are ours, but the comment is direct from the user.

Often Rilco Glued Laminated Arches, Beams and Deck are selected because of their economy. In the case of the Katz Drug Store in Kirkwood, Missouri, however, they offered the architectural effect desired plus the warmth and beauty of wood — economy was a welcome *plus*.

You, too, will find that Rilco *welcome plus values* fit into many types of construction — churches, schools, industrial and commercial buildings. Fire safe, Rilco laminated wood members span large areas gracefully and economically.

Rilco engineers will gladly work with you on your requirements and give on-the-job cooperation. There's a cost saving Rilco member for every type of structure, precision built to meet your needs.

RILCO

works wonders with wood

RILCO LAMINATED PRODUCTS, INC.

2518 1st National Bank Bldg., SAINT PAUL 1, MINNESOTA

District Offices: Wilkes-Barre, Pa.; Fort Wayne, Ind.; Tacoma, Wash.

See Rilco in Sweets or write for free 24 page Catalog

p/a manufacturers' literature

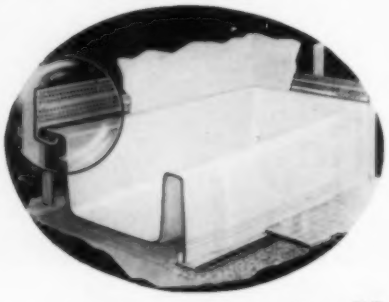
(Continued from page 165)

353. Vampco Aluminum Windows, AIA 16-E, 48-p. catalog on line of aluminum window units. Shows: standard projected sections; heavy-section window wall with vents; multistory window with panes projecting in—for ease of cleaning; heavy-frame tubular sections; and ribbon windows. Also contains data on heavy-section custom windows. Drawings and dimensions for each type of window; specifications. Valley Metal Products Co., Plainwell, Mich.

electrical equipment, lighting

435. Outdoor Lighting with Plexiglas (PL-242), 16-p. brochure containing information on lighting fixtures for roadways, industrial plants, and large outdoor areas. Discusses advantages of outdoor fluorescent luminaires with acrylic-plastic shields; explains savings in maintenance and operating costs. Presents photos of many actual installations. Rohm & Haas Co., Washington Sq., Philadelphia 5, Pa.

Lucke Construction
Behind the Wall
SOLVES LEAKS
a hidden quality



to talk about

For good bathroom planning and design—
LUCKE LEAK PROOF TUB HANGERS seal bathtub edge against leaks permanently, support tub evenly along wall — no cracks develop.

For full particulars send for brochure

WILLIAM B. LUCKE, INC.
BOX 177 WILMETTE, ILL.
Name .....
Street No. .....
City .....

Specify LUCKE for lifetime protection

- NO LEAKS
- NO TUB SETTLING
- NO WATER DAMAGE
- NO REPAIR EXPENSE

436. Luxtrol Light-Control Equipment, AIA 31-F-25 (L755N), 16-p. bulletin giving data on noninterlocking line of dimming equipment. Explains simultaneous operation of several units from master-control station; describes equipment for auditoriums and single-room light control. Application data; wiring layouts; specifications. The Superior Electric Co., Bristol, Conn.

437. Wheeler Bi-Flo Upliter (97), 4-p. circular featuring new industrial lighting fixture which combines 28 percent uplight with low-cost operation. Gives dimensions for fixtures using slimline, bipin, or rapid-start lamps; describes materials and finishes; provides data on proper spacing of lamps. Wheeler Reflector Co., 275 Congress St., Boston 10, Mass.

438. Lumentated Ceiling, AIA 31-F-21, 8-p. brochure on luminous ceiling composed of corrugated vinyl-plastic sheets supported on aluminum framework. Gives suggestions for design of lighting system; provides instructions for design of air-conditioning system, using space above ceiling as air plenum and utilizing special plastic diffuser inserted in ceiling. Photos; installation instructions; specifications. John J. Fannon Sales Co., 1469 Algonquin Ave., Detroit 15, Mich.

439. Federal Pacific Modern Panelboards (3-205), 82-p. catalog on lighting and distribution panelboards. Describes special features of panelboards; gives data for selection of proper equipment. Provides drawings, ratings, and suggested specifications for each panelboard; also includes information on circuit breakers. Federal Pacific Electric Co., 50 Paris St., Newark 1, N. J.

insulation (thermal, acoustical)

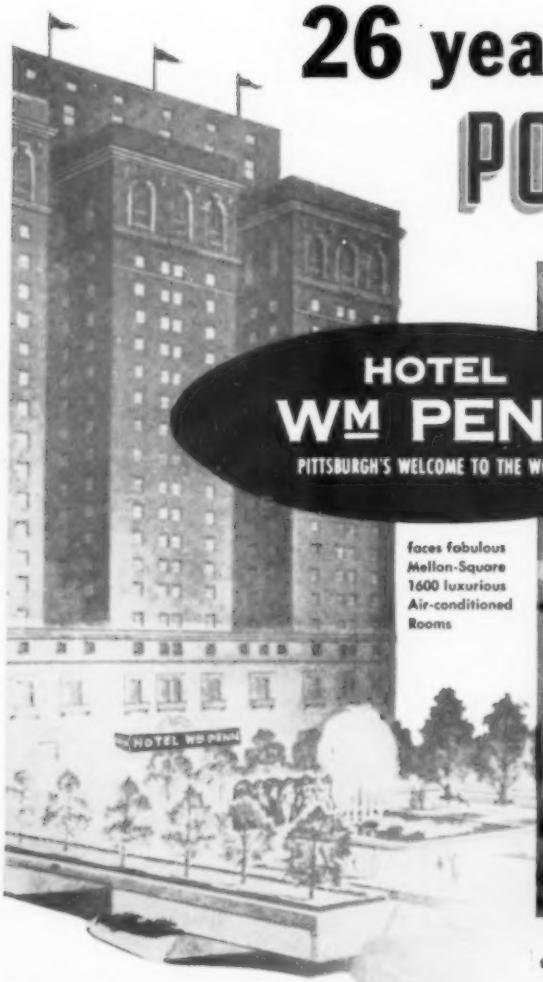
617. Lumaskin Data Sheets, AIA 37-C-3, file folder containing data sheets on creped, edge-reinforced aluminum-foil insulation. Detail sheets show recommended application of insulation in wood-frame or brick-veneer constructions; data pages outline vapor-sealing and insulating properties of material. Angier Corp., Framingham, Mass.

618. Johns-Manville Insulations, 20-p. catalog on thermal insulations for general industrial applications. Lists advantages in installation and service of several types of magnesia and diatomaceous-silica insulations; gives data on physical properties of each product. Also contains information on block and sheet insulations for air-conditioning ducts. Johns-Manville, 22 E. 40 St., New York 16, N. Y.

sanitation, plumbing, water supply

710. Milvaco Valves (B355), 12-p. publication on valves for oil-supply lines—used at airports, industrial plants, and service stations. Tabulates data on hose-nozzle, check, gate, and cross valves; lists physical properties and recommended applications. Photos; data on fittings. Milwaukee Valve Co., 2375 S. Burrell St., Milwaukee 7, Wis.

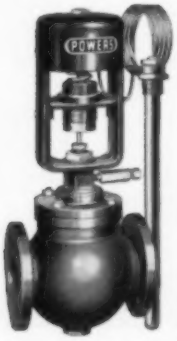
26 year old installation of POWERS No. 11 Self-Operating TEMPERATURE REGULATORS



Each of the four 6" POWERS No. 11 Regulators shown above controls steam supply to a 10,000 gal. water heater. The 4 water heaters provide 140°F. water for use throughout the building.

Often pay back their cost 3 to 6 times a year. By preventing fuel losses caused by OVER-heated water and lasting many years, Powers No. 11 Regulators are a highly profitable investment.

Better temperature control results from their powerful bellows and minimum of valve stem friction. Valve Stem Lubricator aids easy movement of valve stem without binding. Double ply metal used in Powers bellows outlasts ordinary single ply type.



(c69a)

POWERS No. 11 Self-Operating TEMPERATURE REGULATORS
Are fully described in Bulletin 329. Write for a copy.

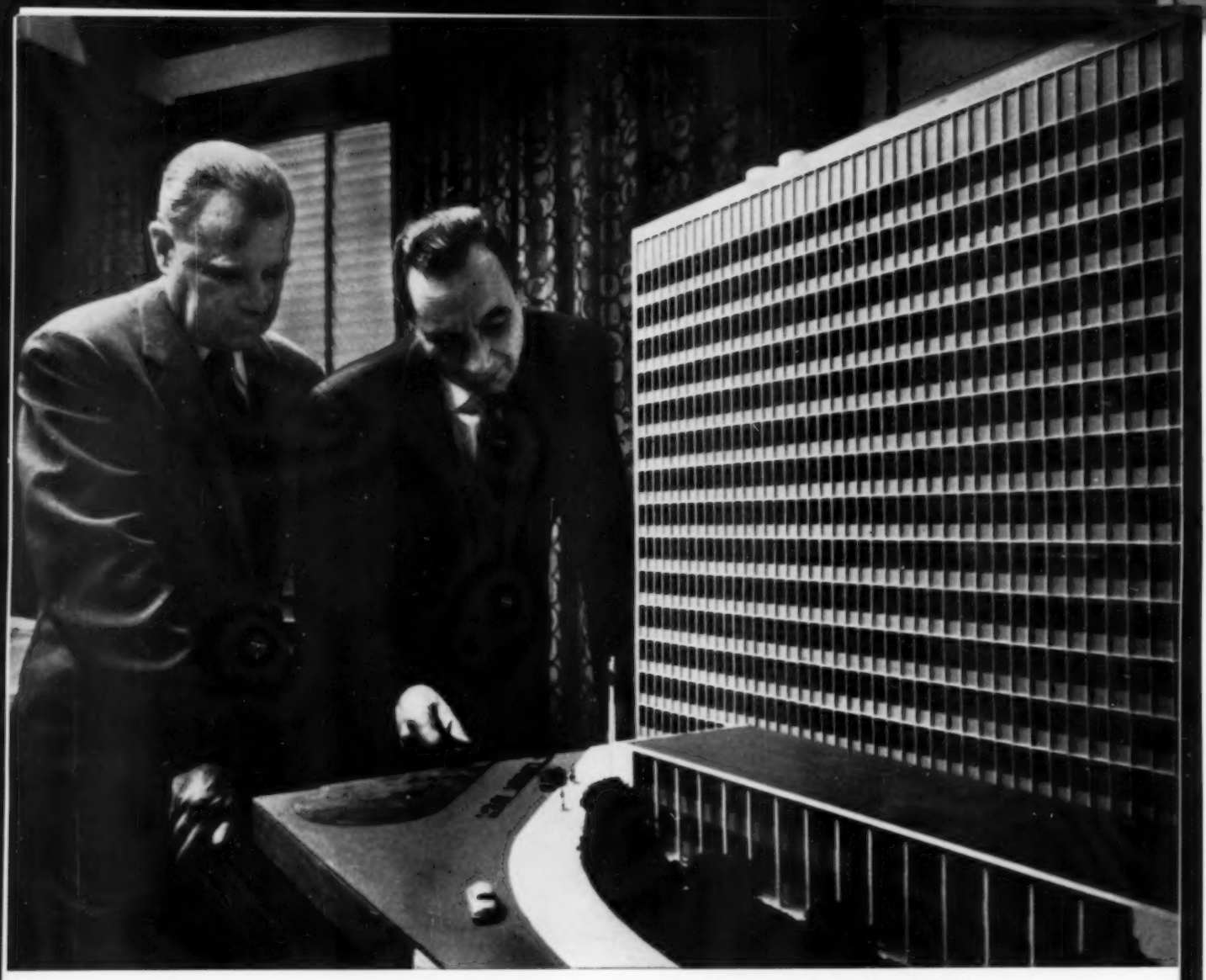
"all are still giving good control"

... states Mr. George Volkart, Chief Engineer of Pittsburgh's well known Hotel Wm. Penn. All four of the Powers regulators were installed in 1930. Operating top for one regulator was replaced in 1954. Now (April, 1956) they are still giving the same good control we have had for over a quarter of a century."

Will the temperature regulators you specify give performance records like those above? With today's high cost of maintenance, Powers time-proven QUALITY controls are a more profitable investment than ever before.

Right type of Regulator and proper size valve is important for good control. Make sure, call Powers nearest office for help with your problems of temperature control.

THE POWERS REGULATOR COMPANY
SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*
65 years of Automatic Temperature and Humidity Control



"This building will never grow old ...electrically!"

Lewis J. Altenhof Philip B. Bown

Altenhof & Bown, Registered Architects

Architects Altenhof and Bown neatly summarized the big reason a National Electric Header Duct raceway system was installed in Pittsburgh's new ultra-modern State Office building . . . "to provide the most complete electrical flexibility."

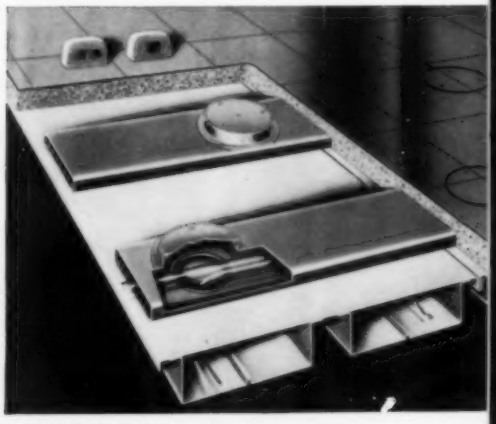
The Header Duct raceway system permits easy access to the building's Fenestra cellular steel floor. The result: a combined electrical raceway system that provides for electrical, telephone and intercommunication outlets wherever and whenever they are needed.

Bright, new aluminum service fittings, less than three inches high, will bring power or telephone service directly to desk locations. Future office layout changes will be made easily at low cost due to the completeness of electrical availability. This building will never grow old . . . electrically.

Yes, clients get more for their money when plans for cellular steel floor construction include electrification by National Electric Header Duct. Why not write for complete information on Header Duct so you will be familiar with all its advantages.

Listed by Underwriters' Laboratories, Inc.

Owners: General State Authority
John N. Forker, Executive Director
Architects: Altenhof and Bown
Electrical Engineer: Carl J. Long
General Contractor: Navarro Corporation
Electrical Contractor: E. C. Ernst, Inc.



Header Duct with Fenestra Electrifloor

National Electric Products

PITTSBURGH, PA.

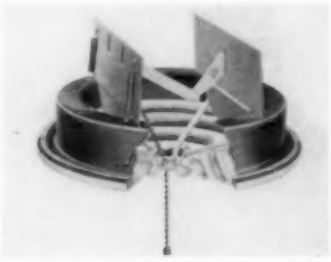
3 Plants • 10 Warehouses • 36 Sales Offices

painter's paint

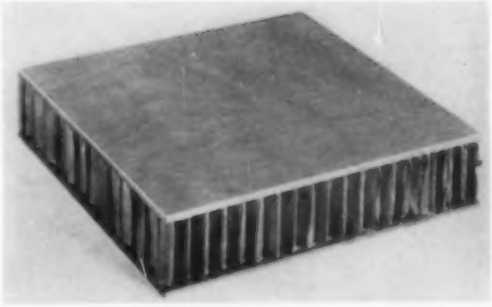
Ore-ite, new asphalt-base coating, is truly a "painter's paint." Available in six colors, it waterproofs, protects, and decorates. Pigment is in form of aluminum flakes rather than granules. When applied, flakes float into 5 to 10 parallel layers with vehicle between each layer—resulting in a waterproof, almost continuous overlapping metal barrier. Asphalt base allows expansion and contraction without cracking. Ideal for roofs, siding, and foundations. $8.95 per gallon. Duncan-Stewart Industries, Ltd., 715 Fifth Ave., New York, N. Y.

green-yellow slide rule

New light-alloy slide rule makes fine calibrations easier to read—preventing blurring and eye strain—as only green-yellow rays focus exactly on retina. Noncorrosive and nonrusting, it will not swell, stick, or warp. Pickett & Eckel, Inc., 5 S. Wabash Ave., Chicago, Ill.



Ceiling-type diffuser (above) *has curved step-down rings without straight edge, which assure maximum free area and efficient distribution of supply air. Correct angle also eliminates ceiling streaks. Has built-in mechanical spring-loaded butterfly dampers. The Lima Register Co., Lima, Ohio.*



Lightweight structural panel (above) *made of paper honeycomb sandwiched between Conolite plastic laminate has many architectural applications: partitions, paneling, countertops, etc. Not affected by alcohol or other liquid stains; resists scratching, chipping, or marring; withstands acids and greases. Honeycomb Division, Continental Can Co., 100 E. 42 St., New York 17, N.Y.*

Roll-out freezer (above) *holds up to 173 lb of frozen foods; takes up no more space than standard kitchen-base cabinet. Can be installed under kitchen counter or placed free-standing anywhere in the kitchen. Eliminates trips to cellar, garage, or utility room. Available in all GE mix-or-match colors; interior finished in turquoise. General Electric Co., Appliance Park, Louisville, Ky.*

This modular kitchen unit (below) *is a complete meal preparation and clean-up center in a single, integrated unit. Includes oven, surface cooking units, plug-in griddle, Disposall and automatic dishwasher, seamless stainless-steel top and sink, single-control faucet, appliance outlets, and storage cabinets for utensils. Available in August. Hotpoint Co., 5600 W. Taylor St., Chicago 44, Ill.*

New uses for sliding glass doors

Varied installations now possible through use of Ador all-aluminum units

Today's trend to greater use of sliding glass doors has expanded far beyond residential construction. Commercial buildings of every type now feature the distinctive sliding glass wall. Contributing to this growing variety of installations has been the development of all-aluminum doors that meet the rigid requirements of this class of construction.

The leader in this field is Ador—the first all-aluminum sliding glass door, weathersealed to permit use in every type of application, and in every climate. Representative of Ador commercial installations are the buildings shown here. For complete information on the Ador sliding glass door, write to Ador Sales, Inc., 2347 W. Commonwealth Ave., Fullerton, California.

Office utilizes Ador sliding glass doors for partitions. Office managers find sliding glass units offer superior lighting, and increase employee efficiency.

Supermarket has Ador sliding glass doors to focus interest on store entrance and attract shoppers. Ease of door operation is an important consideration.

Gasoline Station has full height sliding glass doors. Operator reports improved product display and work efficiency with novel application.

Showroom gains unique display advantages with 32-foot Ador sliding glass doors. Installation facilitates moving cars in and out of display area.

Church expands classroom study area by means of all-aluminum sliding glass doors opening into patio.

Industrial Building illustrates common practice of using sliding glass doors where large window sizes and complete weatherstripping are requirements.

Hotel-Inn features multiple sliding glass doors in each suite. Ador's Alumilite finish permits use under the most severe corrosion conditions.

Ador **America's foremost all-aluminum sliding glass door.**

p/a products

(Continued from page 173)

air and temperature control

"Octopus" Unit: new concept in air-conditioning equipment for office buildings includes built-in provisions for future expansion. One attenuator (for high-velocity systems) feeds conditioned air to four ceiling diffusers through flexible fireproof hose—permitting office spaces to be subdivided or reallocated without costly alterations to metal ductwork. Attenuator may be initially connected directly to ceiling diffuser and four openings for future diffusers can be sealed until needed; unit, hooked up to four diffusers, can be adjusted to set capacity, remote manual control, or thermostatic control. Anemostat Corp. of America, 10 E. 39 St., New York 16, N. Y.

Deluxe Room Air Conditioner: new window-type air conditioner features one-hp reverse-cycle operation (heat pump) that will heat room in addition to cooling it. Unit is equipped with automatic thermostatic temperature control and automatic exhaust system; conditioner has also been designed to give faster cooling, higher capacity, and higher power factor than previous single-cycle units. Disposable glass-fiber filters are used. Frigidaire Div., General Motors Corp., Dayton 1, Ohio.

tiles by SPARTA

One of the Largest Manufacturers of Floor Tile Since 1922

for

SWIMMING POOLS

SPARTA tiles, both glazed and unglazed, offer safety in sanitation because they are resistant to body oils, dirt, and germs. They aid in keeping the water uncontaminated and free from bacterial growths.

"Faiencettes," a quality glazed tile supplied in 29 matt or bright colors, are suggested for the pool lining. Or, "Dresdens," an unglazed porcelain type tile, made in pastel colors, are also offered for this purpose.

For the runway, you will find Sparta unglazed "Orsan" or "Mosette" tiles reduce the chance of slipping and falling due to their slightly irregular gripping surface texture. They will also reduce maintenance cost, because their dense impervious body is immune to the destructive elements. For ramps, or especially hazardous areas, Sparta offers "Saflor" (a corrugated surface mosaic tile) and also abrasive content tiles.

Pre-formed large gutter units, both goose neck and open face roll-out type, are offered in 6" lengths. These units eliminate tedious template formation of gutters.

Our long experience with pool installations is freely available and requests for tile information are invited.

Write for Complete Information

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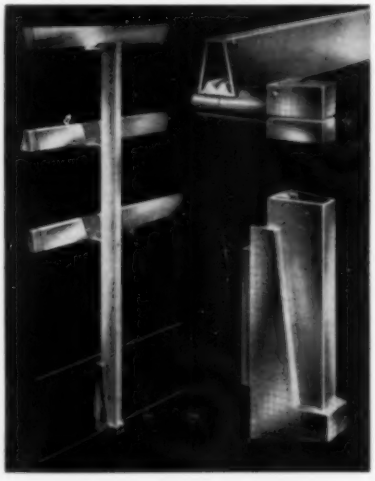
construction



Tube-Line Aluminum Railings: low-cost aluminum railing is designed for use in place of pipe railing for service stairs, exteriors, and other locations when cost is limiting factor. Shop labor and erection costs are kept to minimum because handrails and posts are fabricated from one standard shape; adjustable patented fittings facilitate troublefree assembly. Railing sections and fittings are supplied by manufacturer to local ornamental-metal fabricator, who builds and installs railing to architect's specifications. Parts can be cut by saw; only one hole for each intermediate rail needs to be drilled. Blumcraft of Pittsburgh, 460 Melwood St., Pittsburgh 13, Pa.

doors and windows

Golden-Dowel Door: solid-core, veneered, flush door is guaranteed for life of installation. Staved-core construction utilizes low-density-wood blocks; core, cross bandings, and face veneers are bonded into single unit. Golden dowel, inserted in edge of each door, identifies construction; serial number is recorded on hinge edge of door as well as on written guarantee. Roddis Plywood Corp., Marshfield, Wis.

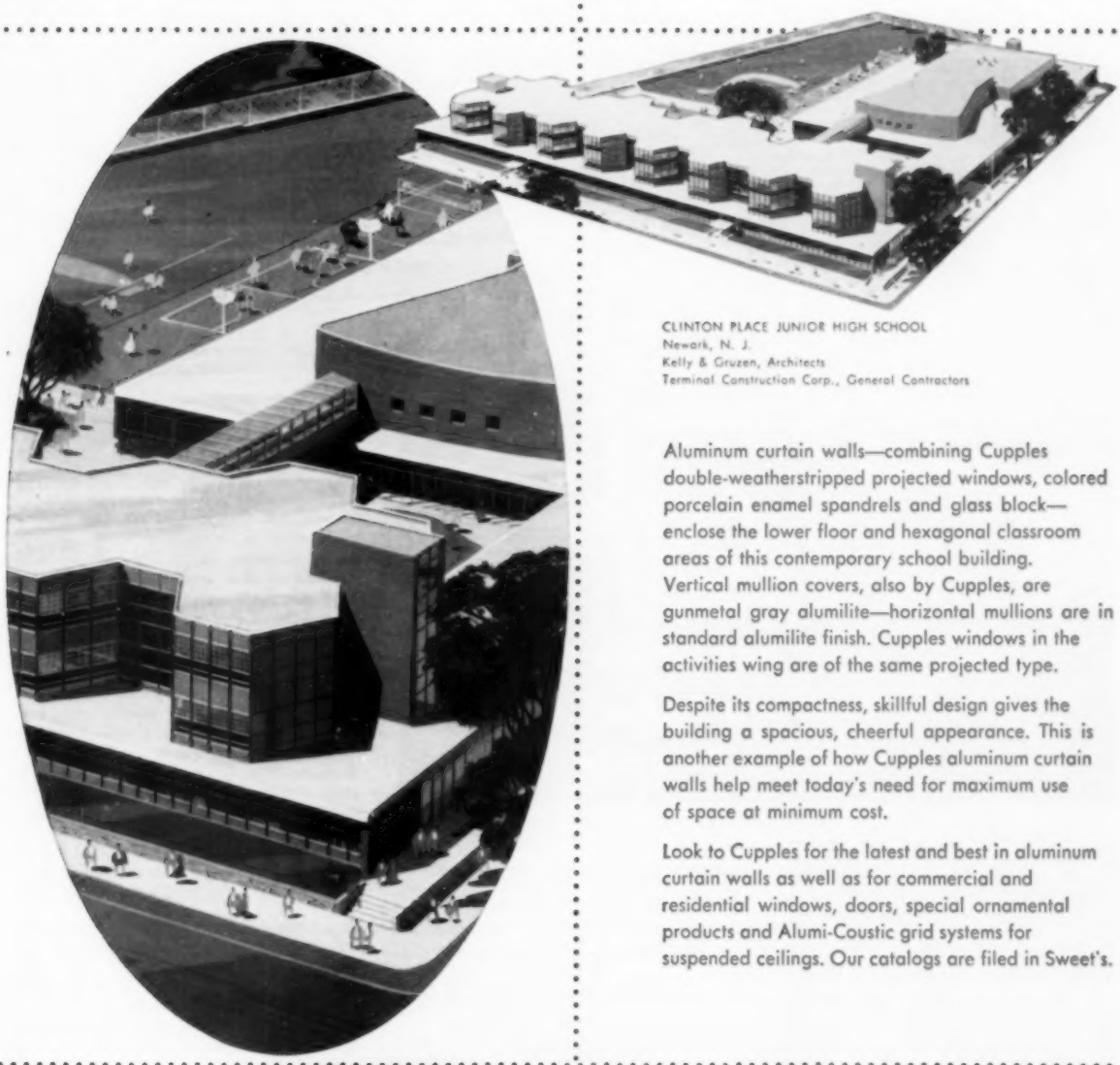
specialized equipment

Mobile Refrigerated Milk Dispenser: self-contained unit provides sanitary storage and refrigeration for ½-pt milk containers. Dispenser, with calibrated spring mechanism, keeps full rack at top level;

(Continued on page 178)

CUPPLES
ALUMINUM CURTAIN WALLS

HELP GIVE THIS FUNCTIONAL SCHOOL MORE LIGHT, MORE SPACE AT LESS COST



CLINTON PLACE JUNIOR HIGH SCHOOL
Newark, N. J.
Kelly & Gruzen, Architects
Terminal Construction Corp., General Contractors

Aluminum curtain walls—combining Cupples double-weatherstripped projected windows, colored porcelain enamel spandrels and glass block—enclose the lower floor and hexagonal classroom areas of this contemporary school building. Vertical mullion covers, also by Cupples, are gunmetal gray alumilite—horizontal mullions are in standard alumilite finish. Cupples windows in the activities wing are of the same projected type.

Despite its compactness, skillful design gives the building a spacious, cheerful appearance. This is another example of how Cupples aluminum curtain walls help meet today's need for maximum use of space at minimum cost.

Look to Cupples for the latest and best in aluminum curtain walls as well as for commercial and residential windows, doors, special ornamental products and Alumi-Coustic grid systems for suspended ceilings. Our catalogs are filed in Sweet's.

Cupples

PRODUCTS CORPORATION
2660 South Hanley Road • St. Louis 17, Missouri

p/a products

(Continued from page 176)

unit, holding up to 320 milk cartons, can be wheeled into counter openings or adjacent to serving lines. Stainless-steel dispenser has forced-air cooling unit, with ¼-hp compressor for operation on 60-cycle 110-v a-c current; dispensing mechanism, compressor, evaporator, thermostat, and built-in drain are completely enclosed. Lowerator Div., American Machine & Foundry Co., AMF Bldg., 261 Madison Ave., New York 16, N. Y.

Home Safes: floor and wall safes protect valuables from fire as well as from theft. Safes are guaranteed to withstand temperature of 1700F for one hr; grooved construction of doors seals interior of safes even if doors should expand with heat. Wall safe is equipped with combination lock which can be set by home owner, while floor safe has pin-tumbler cylindrical lock; both are also equipped with hidden latch bolts or dead bolts to insure that safe will remain closed even if door hinges are knocked off. Constructed of heavy-gage steel, safes are designed to fit between wall studs or floor joists; interiors measure 13″x9½″x6″. Yale Lock and Hardware Div., Yale & Towne Mfg. Co., 11 S. Broadway, White Plains, N. Y.

HEADLINED THE NAHB SHOW

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NOW! $198* appliance makes "modern home" mean luxury Drive-In-Home

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Mechanical advances and improved production make this low price possible. New features like instant reversing action and low voltage requirement make Barcol Doorman a better value than ever.

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Dept. N-66, Rockford, Illinois

surfacing materials

One-Piece Panelyte Counter Tops: high-pressure laminated-plastic surfacing material can be postformed to make kitchen counter top with integral back splash and front edge. Specially engineered grade of 1/20″ laminate permits postforming of convex and concave curves with radii as small as ¾″; elimination of conventional metal molding or self-edging facilitates installation and avoids dirt-catching crevices. Available in widths of 30″ and 36″; in lengths of 96″ and 120″. Panelyte Div., St. Regis Paper Co., 230 Park Ave., New York 17, N. Y.

Latex Terrazzo: new surfacing material, using regular terrazzo matrix with latex-liquid base, provides resilient terrazzo flooring. Mixture, which can be applied to floors and walls in ½″ thickness, is troweled, and then given finish grinding; lightweight, waterproof latex base allows application of terrazzo on wood, walls, and stairs. Rubber content provides durable, cushioned walking surface. The Camp Co., Inc., 6958 S. State St., Chicago 21, Ill.

Nonfading Gold Aluminum: new method of anodizing aluminum produces nonfading gold-colored metal in shades ranging from pale straw to deep golden bronze. No dyes or coloring materials are used; when readily alloyed constituents are added to molten aluminum, anodizing process changes aluminum from gray to gold; integral cladding formed on metal sheet also increases its corrosion and wear resistance. Different shades are produced by varying anodizing conditions; different surface treatments—such as bright or satin finish—are given to metal before anodizing. Kaiser Aluminum & Chemical Corp., Kaiser Bldg., 1924 Broadway, Oakland 12, Calif.

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in your clients' homes

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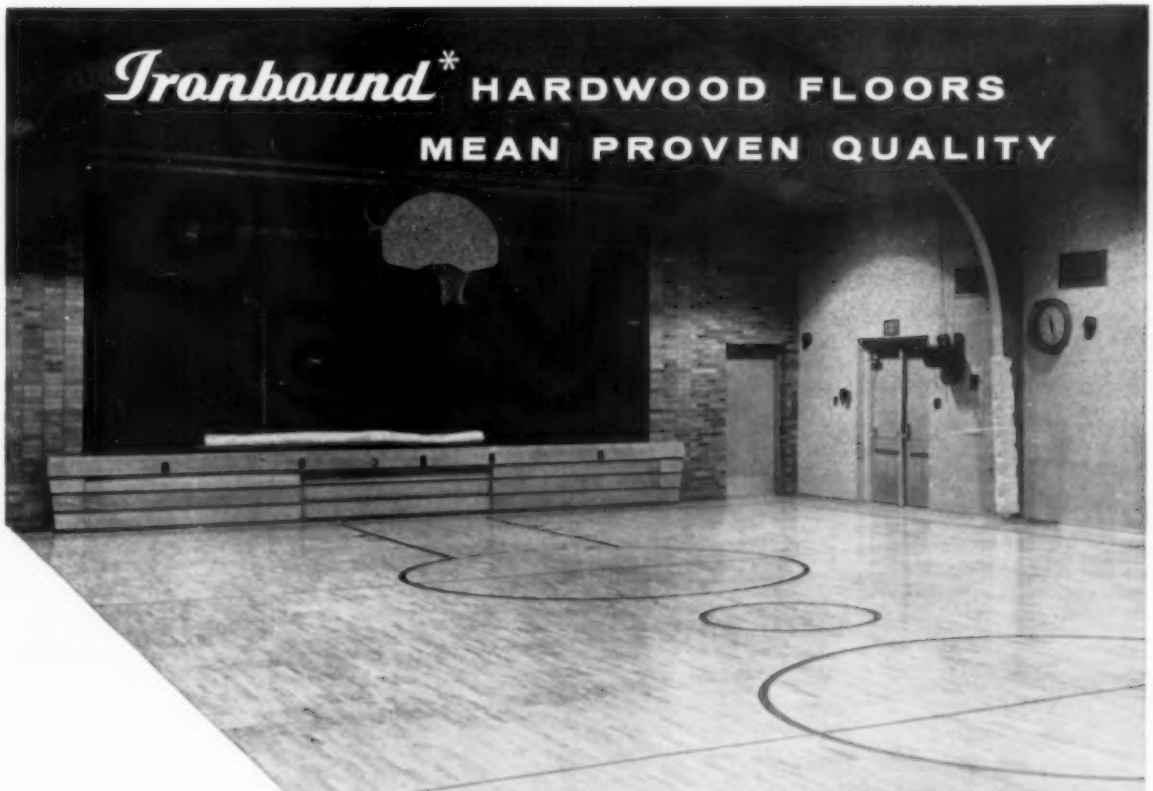

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books received

Church Architecture in New France. Alan Gowans. Rutgers University Press, New Brunswick, N. J., 1955. 162 pp., illus., $8

From the Ground Up. Lewis Mumford. Harcourt, Brace and Company, Inc., 383 Madison Ave., New York 17, N. Y., 1956. 243 pp., $1.25 (paperbound)

stimulating ideas

Watercolor Methods. *Edited by Norman Kent. Watson-Guptill Publications, Inc., 24 W. 40 St., New York 18, N.Y., 1955. 128 pp., illus., $7*

The fundamental purpose of *Watercolor Methods* is to present the varied points of view of 18 painters, with the idea that a synthesis formed by the reader will be of more value than a "one-man" book which might exert undue influence of style.

The validity of this thesis inevitably depends on the articulateness of 18 individuals—with assistance from the editor. All the painters represented are sound craftsmen and draftsmen; their combined experience and achievements are impressive. As a joint treatise on the esthetics of watercolor painting, *Watercolor Methods* cannot be ignored.

The *Methods* of the title of the book is intended to cover the painter's philosophy of composition as well as his technique. It is in this respect that a basis for appreciation may be reached, for if one has had some experience as a water colorist the book has little to offer. If one is a novice, a "one-man" book such as Olsen's *Watercolor Made Easy*, is of greater value because of its more coherent organization, its compilation of more complete factual information, and its graphically illustrated step-by-step exposition. However, as a guide to the creative process of painting, *Watercolor Methods* offers a fund of stimulating ideas.

The book is lavishly illustrated. Each painter is represented by several black-and-white reproductions and one seemingly excellent color reproduction. It is in terms of these that each painter discusses his work. With the exception of Chen Chi, Dong Kingman, and possibly Henry C. Pitz and William A. Smith, the examples are pleasantly traditional.

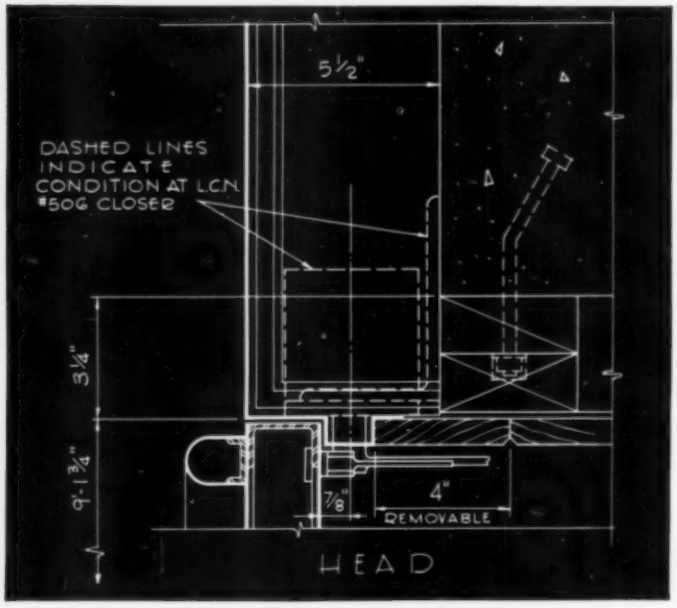
WILLIAM C. HOLDSWORTH

informative review

Home Air Conditioning. *G. J. Stout. D. Van Nostrand Co., Inc., 250 Fourth Ave., New York, N.Y., 1956. 276 pp., illus., $5.95*

The Architect and the Engineer converse with each other about the problems and applications of air conditioning, in terms each understands,

(Continued on page 186)



CONSTRUCTION DETAILS

for LCN Overhead Concealed Door Closer Installation Shown on Opposite Page

The LCN Series 500 Closer's Main Points:

1. Efficient, full rack-and-pinion, two-speed control of the door
2. Mechanism entirely concealed; arm visible on inside of an out-swinging door
3. Hydraulic back-check prevents door's being thrown open violently to damage door, walls, etc.
4. Double lever arm provides maximum power to overcome wind and drafts
5. Arm may be hold-open type, 90° to 140° or 140° to 180°

Complete Catalog on Request—No Obligation or See Sweet's 1956, Sec. 18e/L

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Choix and Johnson, *Architects*

MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN HEAD FRAME

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LCN CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page

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Adaptable, fire-protective system meets rigid performance requirements

From Coast to Coast, U. S. G. Roof Deck Contractors are ready to apply the new materials and assemblies described here. Each of these competent, financially-responsible business organizations operates with a modern fleet of specialized equipment, skilled supervisors and crewmen to assure quality workmanship. For details on U. S. G. gypsum roof deck, see Sweet's Section $\frac{2e}{Un}$.

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INSULATING AND ACOUSTICAL PROPERTIES are found in a new, lightweight, incombustible mineral-fiber formboard called PYROFORM*. Used in combination with PYROFILL gypsum concrete, it can mean considerable savings in construction costs; economy in heating or cooling. PYROFORM-PYROFILL roof decks have a U factor of .16; an N.R.C. rating of .75. Boards are sized to suit job needs.

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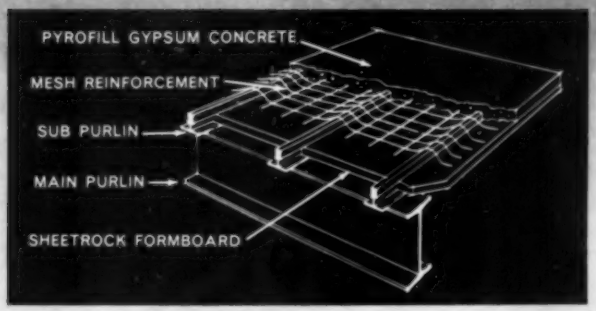

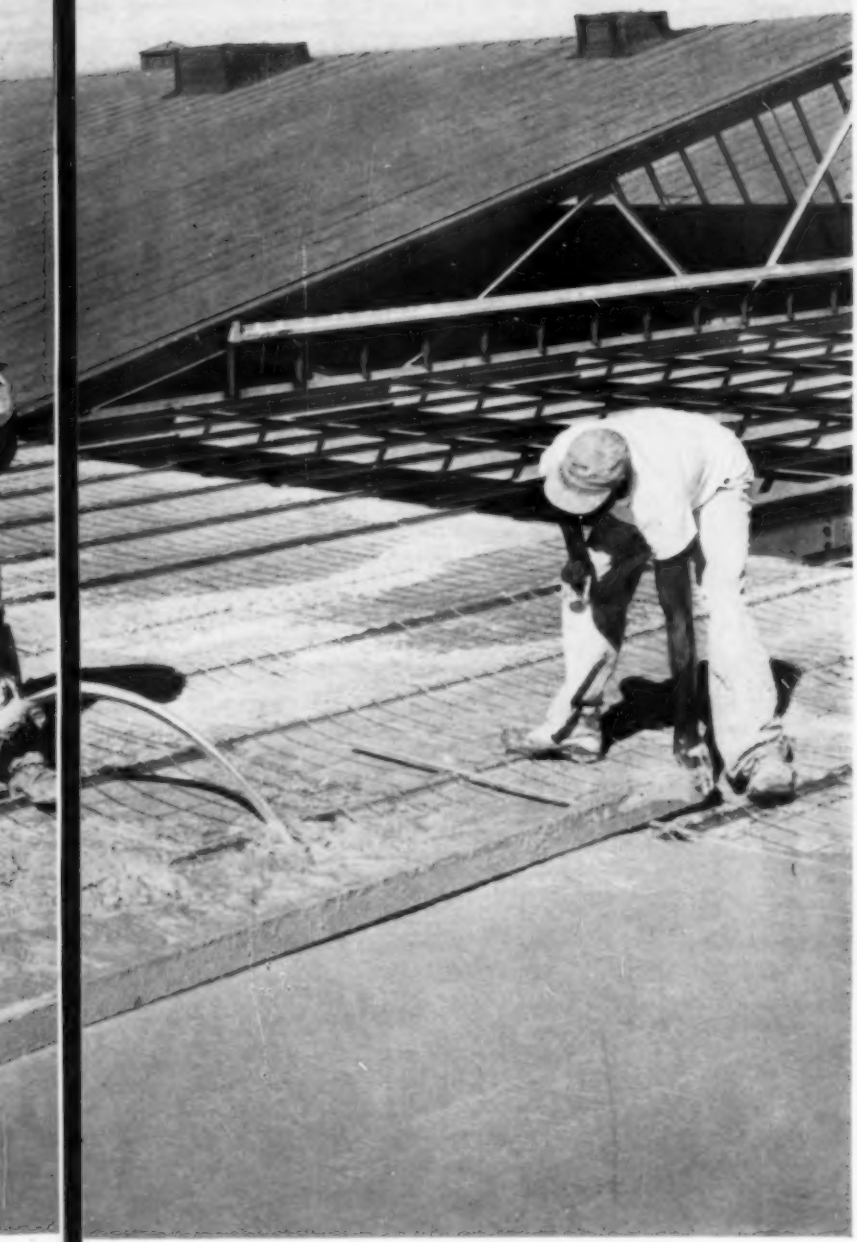

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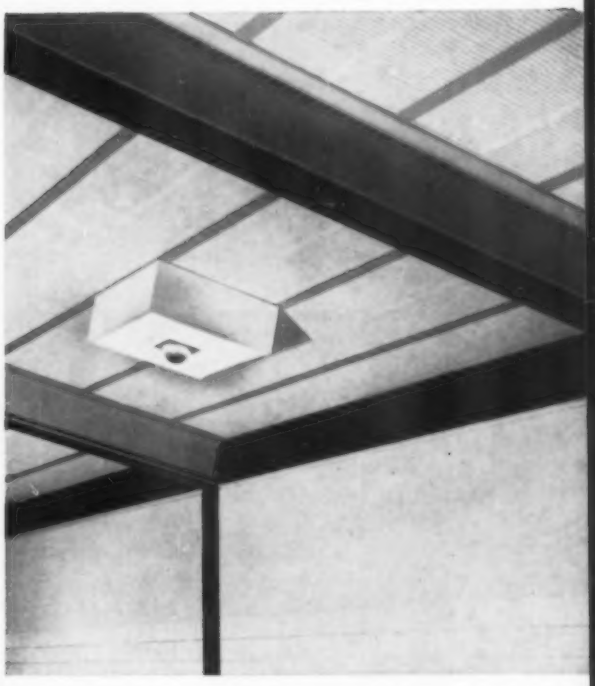
Creative materials for creative architecture



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FIRM_____

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CITY_____ STATE_____

(Continued from page 182)

terms familiar to both through professional training and experience. But what of the Average Client and prospective homeowner? Usually a layman with little knowledge of the technical terms involved, he is, nevertheless, the man who foots the bills and either likes or dislikes the final results—two important facts often overlooked by the professional. When confronted with terms of "wet bulb," relative humidity, btu per pound of dry air and other variables of control necessary for the proper design of an air-conditioning system, the clients' reaction to such technical talk is, understandably, something less than rapt attention. I'm afraid, as too often happens, the client will dismiss the whole thing and escape to the appliance salesman, where he will be patted on the back and sold a "package system," probably inadequate or unsuited for his needs.

This is a book that eases the present, and prospective, homeowner almost imperceptibly into the middleground of knowledge concerning air conditioning for the home. Written primarily for the laymen who may be thinking about air conditioning at the present time, or for some time in the future; giving factual knowledge, but without the technical terms making such information difficult for the layman to understand.

Stout has traversed his ground with considerable acumen, for, although the book is not complex enough to train the reader as an air-conditioning engineer, he has, at the same time, covered considerable ground with commendable thoroughness, and offers many practical and useful ways and means to comfort. He has interspersed his text with comments which amplify and lighten this rather complex subject, so that the book becomes quite enjoyable and not at all tedious in content.

There are some points of construction and the structural ideas involved, where Stout seems to have gathered insufficient evidence. He seems to have worried about several small items that are rather easily taken care of by the Architect, but, in all fairness, it should be noted that this book is written by a man not in the architectural field, and he has, as a whole, done an excellent and rather comprehensive coverage of a difficult subject. This book should be a real aid to the homeowner in learning what it means to have a good air-conditioning system, and what is needed to keep him comfortable with the variables of humidity, air movement, and temperature The types of equipment that are available, with some of their inherent advantages and disadvantages, as well as some cost analyses so that a better choice can be made for a

(Continued on page 190)

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See our catalog in Sweet's Architectural File, $\frac{32a}{Ra}$

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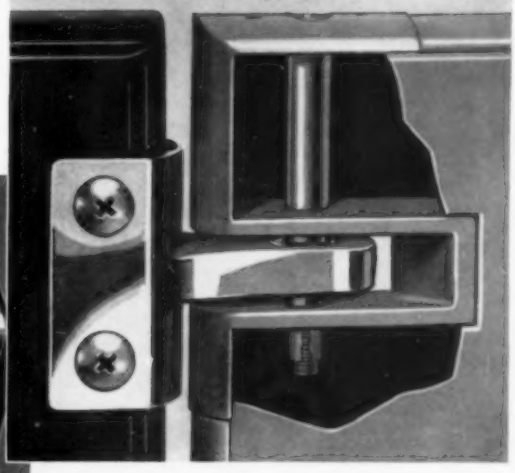
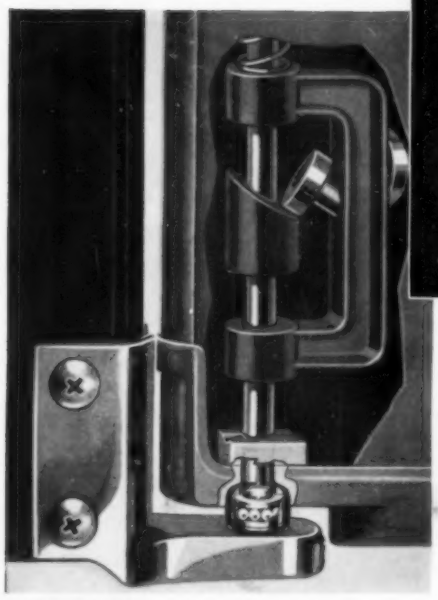
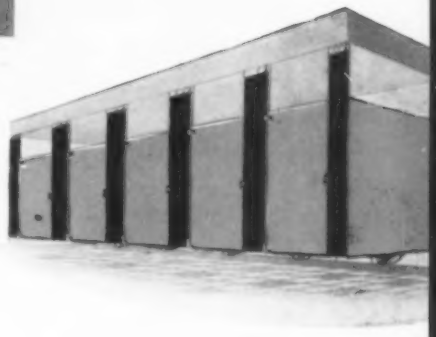


The Sanymetal 7700 Clevis Type Top Hinge, designed for trouble-free operation—no maintenance expense.



The Sanymetal Concealed 7700 Bottom Hinge, bearings at all moving parts —simple door adjustment —permanent lubrication —no replacement ever.



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with the famed Sanymetal Concealed 7700 Hinge the first cost is your last cost

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Since its introduction this hinge has been outstanding for design and economy. It is notable for—

attractiveness . . . concealed within door

durability . . . wearing qualities proved by tests, made by independent laboratories, through 301,000 cycles of use

strength . . . so designed that a heavy man can swing on the door without harm to the hinge

engineering . . . the "clevis" principle noted at right

In addition to these facts, the 7700 Hinge is also more easily adjusted to position. Just loosen one adjusting nut, swing the door to the desired rest position, and tighten the nut—an easier and quicker adjustment that saves man hours.

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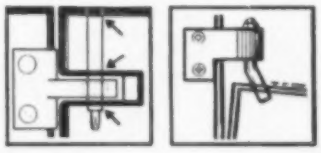
See Sweet's, or send for Catalog 93 describing all Sanymetal Compartments. If you wish we will mail you all advertisements in this series explaining construction details that mean quality.



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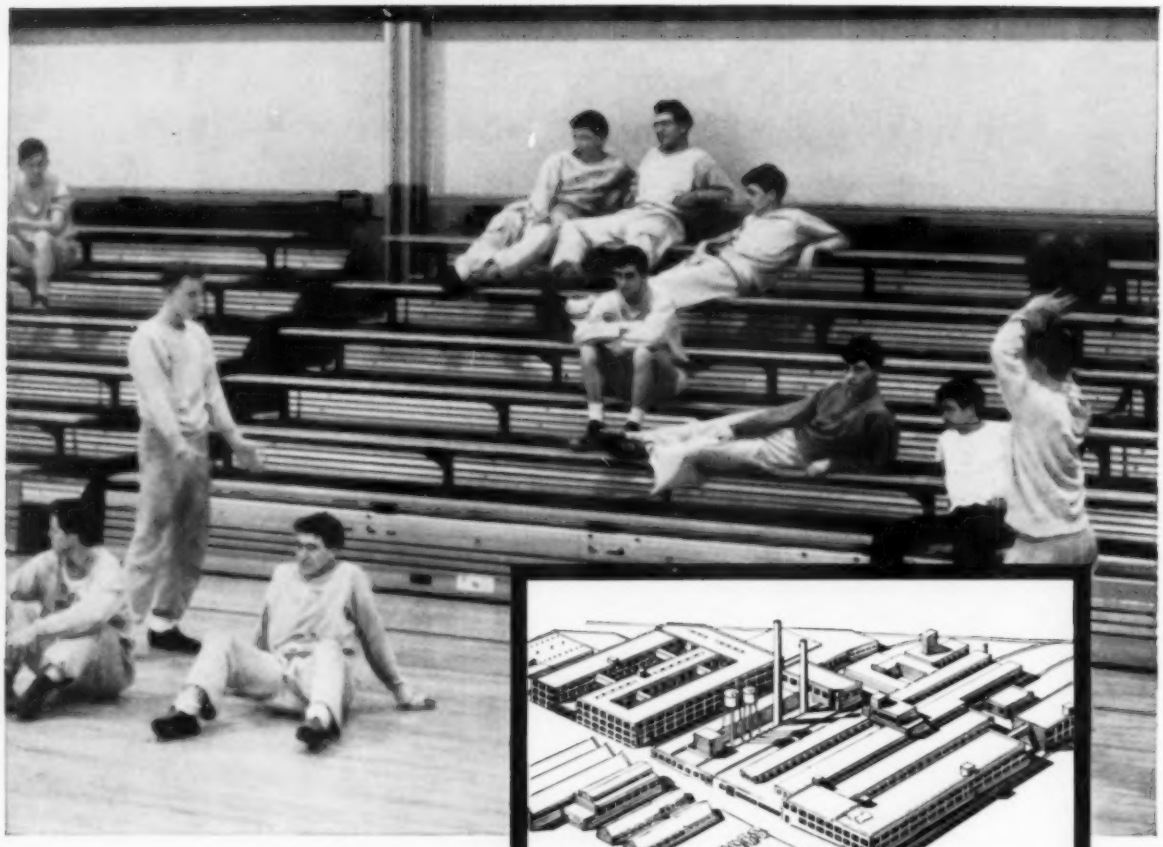

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Complete factory control of all board manufacture

Brunswick-Horn (and only Brunswick-Horn) controls the complete manufacture of seat boards within their own plants.

Both flush and grooved type boards are edge-laminated for greater strength, safety and durability. Lumber is flat sawn, kiln dried, re-sawn and turned to provide edge-grain strength. Pitch pockets, bad graining, and knots . . . all defects are rejected! Selected stock is electronically glued under pressure. Hand sanding and finishing complete the operation.

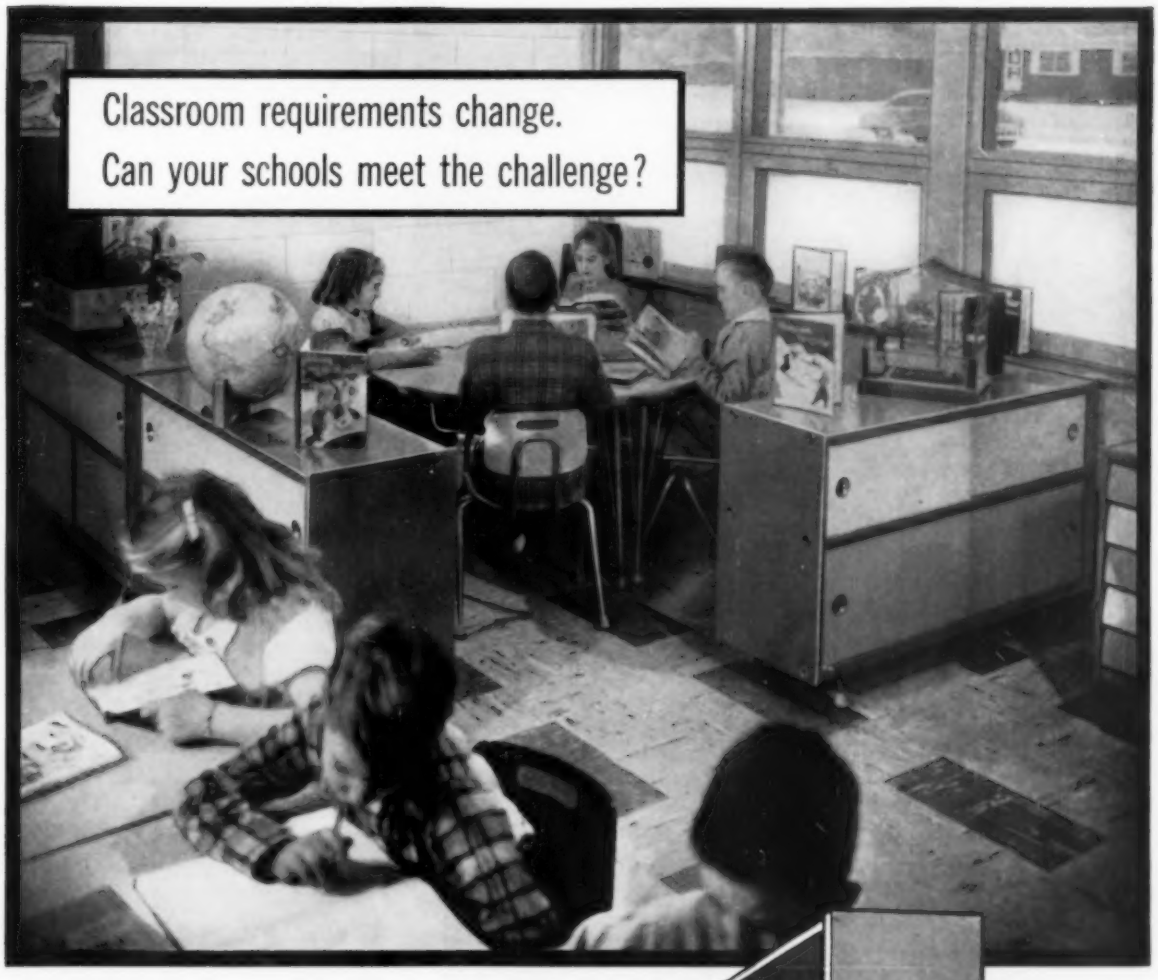
Rail type boards are also available to allow free circulation of air where wall ducts exist.

Have your Brunswick-Horn representative explain why these, and other exclusive features, make Brunswick-Horn your best investment in gymnasium seating. Call him today. He will be glad to arrange a meeting at your convenience.

See SWEET'S 22 J / Ho

THE BRUNSWICK-BALKE-COLLENDER COMPANY
Horn Division • Marion, Virginia

Brunswick Horn



Plan with Brunswick to avoid the restrictions of built-in cabinets!

Modern classrooms call for the up-to-date flexibility and versatility of Brunswick *movable* cabinets.

Classroom cabinets by Brunswick are flexible. They can be changed as fast as curriculums, grade levels or teaching methods change. They're *versatile*. Easy to use. Easy to move. They're *colorful*, too. Brunswick brings living room colors to the classroom. Students like learning and learn easier and faster.

Of course, Brunswick Cabinets eliminate the restrictions and *high cost* of built-in millwork.

Planning on classroom Cabinets? It will pay you to talk with your Brunswick representative. He's always as close as the phone on your desk.

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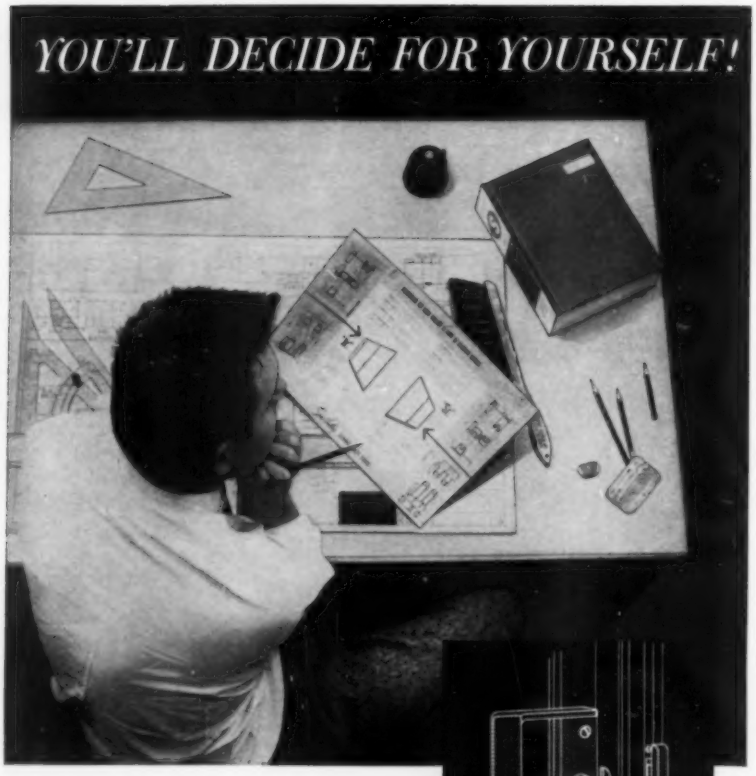

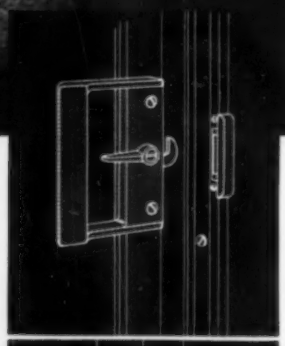

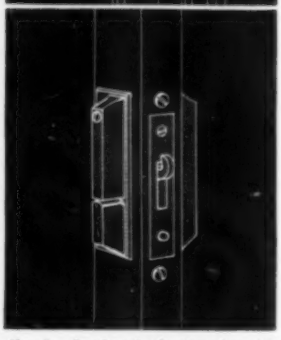

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Sun Valley helps you maintain your pride of design in your completed project by furnishing the finest structural design and quality in aluminum sliding doors. Constructed of rugged extruded aluminum ... yet slim and trim to provide attractive functional styling. Sun Valley doors use a greater expanse of glass, creating the new "Outward Vision"... making the outdoors an immediate living part of the indoors.

Doors glide silently, effortlessly on sealed ball bearings. Complete weatherstripping with continuous strips of mohair and extruded neoprene assure positive weather control.

Three models, Sun Valley Sr., for deluxe installations, the Jr., for low budget and multiple housing installations, and the new Imperial for all-weather double glazing, give full coverage in price range and sizes. Ease of installation saves time and cuts construction costs.

Sun Valley's nationwide distributor organization assures availability in your area when you designate Sun Valley.

Before you select a sliding door, study Sun Valley see what makes this a better door and the door to specify.

You'll find Sun Valley sliding doors (A.I.A. File No. 16E) listed under section 16d/Su in the 1956 SWEET'S catalog or write Dept. 209 for complete information and detailed drawings for your files. Complete line of aluminum sliding windows and jalousies also available.

SUN VALLEY INDUSTRIES, INC.
8354 SAN FERNANDO ROAD, SUN VALLEY, CALIF

reviews

(Continued from page 186)

particular budget; the planning for and installing of air-conditioning systems in new homes and homes already built, with hints on the use and care of this equipment.

The chapter on the proper use and care of air-conditioning equipment is, in my opinion, a much overlooked and neglected part of this subject. Probably more people are dissatisfied because their expensive installation does not operate as they expected it to, than for any other single reason. The truth of the matter is that they, themselves, are the chief cause of the improper operation; largely through not knowing how the equipment should be run for the most efficient and economical operation, and, also, because of some fallacious and untrue ideas they might have. To be able to recognize when something is not operating correctly, and to know whether it is necessary to call a maintenance man, or just push a reset button, or make some other minor adjustment is indeed helpful to all people who have such equipment.

Probably the hardest single client to satisfy is the prospective home builder. The Architect who is trying to make this important client happy should have at his disposal as much information and as many aids as possible, in order to sell him on the newer developments and equipment that will make him comfortable. From this standpoint, I feel that this book could be of considerable value.

The professional can find use for this book as an aid in selling his client on the need for planning in the air conditioning of future buildings. The homeowner, himself, should find it particularly useful in learning what will suit his needs in more comfortable living.

Whatever the particular reason, I recommend this book to anyone interested in air conditioning as applied to the home, whether from a limited installation or a complete complex system. G. J. STOUT

MENGEL DOORS

come in 6 popular woods—

and they're all trade-marked

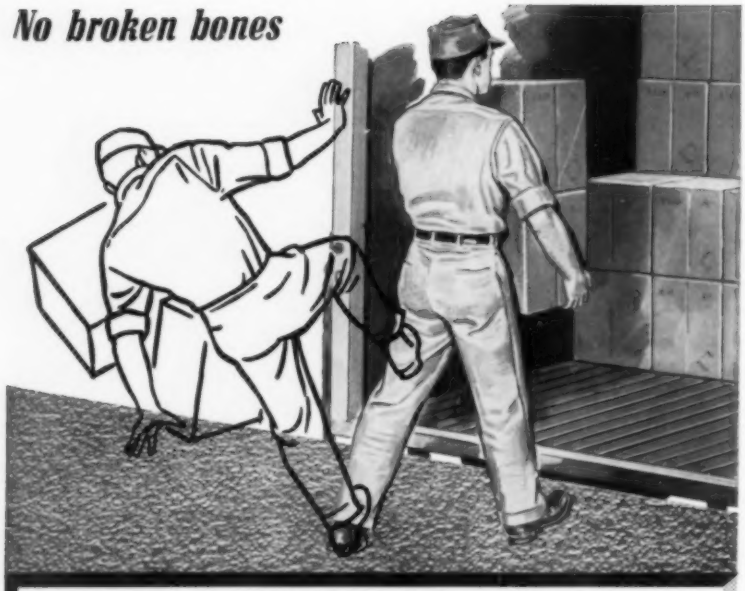
Mengel Doors come in *six* of the world's most beautiful cabinet woods—Gum, Gold Coast Cherry, African Mahogany, Oak, Walnut, Birch. And, for your pride and protection, all Mengel Doors (both hollow-core and solid-core) carry the striking new doweled-in-the-stile 'Mengel-Man' trademark—*a quality symbol all America recognizes.*

Speaking of Gum, we do some very nice things with it. At a recent show, for example, a well-known builder mistook one of our Gum doors for a much higher-priced wood—which we also make. It's pleasant to know our extra care is noticed by the right people.

Door Dept., The Mengel Co., Louisville 1, Ky.

Mengel Doors equal or exceed the requirements of Bureau of Standards specifications CS200-55

No broken bones



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No slip!

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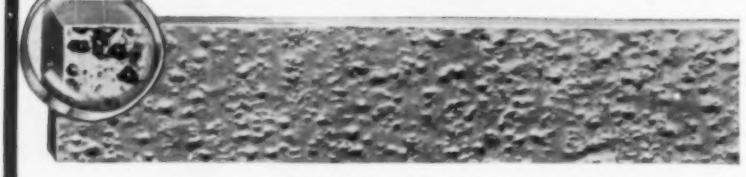

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Architectural Criticism

(Continued from page 143)

"frank," "pure," "simple." It was politically desirable because it was "democratic," "unpretentious," "unassuming," and devoting its attentions to the problems of the common man. It was consonant with the technological realities of the day: Le Corbusier's house was described as a machine for living. It used not only the tools of the new industry (Gropius' Bauhaus) but also its organizational methods (Gropius' theories of group design). Finally, as it was all of these, the new architecture was socially and physically desirable because of the qualitatively new environment it gave to men: the Swiss and German *Siedlungen*, Le Corbusier's *Radiant City*, Wright's *Broadacre City*, Mumford's writings on Patrick Geddes and the Garden City.

Since the appearance of modern architecture in America coincided with the Great Depression, it is not surprising to find it identified, in a general sort of way, with the social objectives of the New Deal. Contrarywise, the task of discrediting traditional architecture was made much easier by its identification, both real and imaginary, with the old order under whose regime the debacle had occurred. This lent a note of moral fervor to much of the critical writing of the period. Frank Lloyd Wright saw "taking shape in the noble realm of ideas as Architecture . . . [the concept of making] our machine power and our millions democratically beneficent."

Mumford was stirred by the same potentials: "the great mass of housing erected since the industrial revolution . . . was unhygienic, ugly, and inadequate. . . . The machine has endowed us with new powers and created new needs: the hygiene of the body, the care of health, the widespread interest in athletic recreation, the education of children, the use of leisure—all demand an en-

(Continued on page 194)

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H. B. SMITH BOILERS

Well, you can hardly blame the youngsters — it's a long, long time between school closings due to failure of an H.B. Smith cast iron boiler. You see, these boilers are virtually breakdown-*proof*, due to their header-type construction . . .

But give the children a few more years: they'll be parents paying taxes to retire new bond issues for more classrooms for more children . . .

They'll vote "MOST POPULAR" when they learn that the H. B. Smith boilers, installed 20 years before, are still in first-class condition, and can be expanded with new cast iron boiler sections to carry the increased heat load . . . saving thousands of dollars.

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. . . "MOST POPULAR" as the years pass, because of fuel economy, quick heating, easy conversion, ability to take overloads — and, of course, *low maintenance and repair* . . .

Two 10-section oil-fired 60 Smith boilers installed in the Elementary School at Penn Wynn, Pa., in 1930, were enlarged to 26 sections each in 1949, and are serving the second generation . . . and there are more of them.

It's not unusual for an H.B. Smith cast iron boiler to serve three generations of children in a school.

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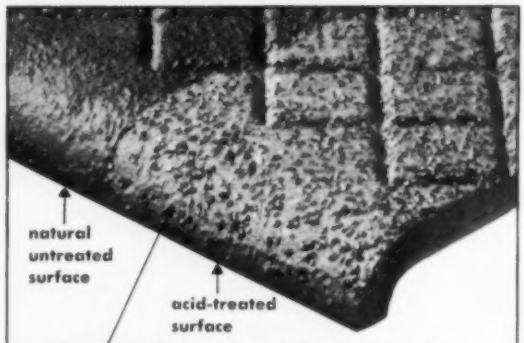
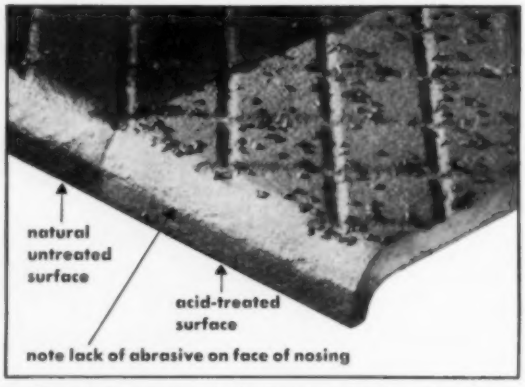
This is the amount of abrasive in a 6" x 6" section of a Feralun Safety Tread.



Here is an unretouched photograph of a Feralun tread taken after the paint was removed from a portion of it and acid used to eat away the metal base so as to fully expose the actual abrasive content. *Note the full and even distribution of abrasive carried right over into the nosing.*

COMPETITIVE SAFETY TREAD

This is the amount of abrasive in a 6" x 6" section of an "abrasive tread" offered as a substitute for Feralun.



Here is an unretouched photograph of an abrasive tread, purchased on the open market, of a type sometimes offered as an equal to Feralun. It has had identical treatment as Feralun tread above. *Compare the meager amount of abrasive and its spotty distribution with that of Feralun.*

Feralun is available as treads, thresholds, floor plates and elevator sills. Also in Bronzalun, Alumalun and Nicalun. See Sweet's Catalog 1956—13b/Am.

AD 131

AMERICAN ABRASIVE METALS CO., IRVINGTON 11, N. J.

Architectural Criticism

(Continued from page 192)

vironment differently ordered from that with which our ancestors were content."

The Cheneys, in another influential book of the '30s, saw "the community of tomorrow as a place unified and harmonious: and industrially-designed machine age entity. Its considered patterning of buildings and spaces, its landscaping, public and private, are a coming realization of the universal utility of the machine."

So sharp was the struggle to free architecture from the dead hand of tradition that even the most esthetically minded of the critics accepted this moral reference frame. "It were better," said Hitchcock and Johnson in 1932, "that the world build only according to the rigid anti-esthetic theories of the extreme European functionalists than that 19th Century debauchery of design shall continue."

So suspect was all traditional art and ornament that all enrichment was distrusted. Frank Lloyd Wright had already denounced the entire field of Renaissance art as "a soulless blight, a warning, a veritable damnation."

Mies van der Rohe was shortly to coin his famous phrase "less is more." And Hitchcock and Johnson were admitting that modern architecture "sets a high but not impossible standard for decoration: better none at all unless it be good. . . . It aims as much at making monstrosities impossible . . . as at assuring masterpieces."

Such prophylactic measures were historically necessary. The task of selling the American people a wholly new kind of beauty could not make much headway until they were convinced of the bankruptcy of the old forms of beauty. Hence the protagonists of the new style were proceeding, consciously or not, on Emerson's wise theory that the good and the true become ultimately the beautiful.

(Continued on page 197)

INTRODUCING...

SYLVANIA'S NEW MOHAWK SERIES

Sylvania Mohawk Series. Available in 2 widths, 2 lengths, 4 types of shielding. (Above) *The Super-Chief*, 23¾" wide; 8-foot-unit with Plastic Louvers shown.

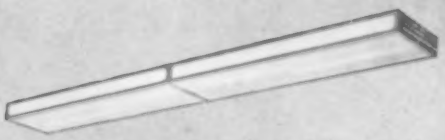
...surface-mounted shallow fixtures for today's low ceilings

Here's a new custom approach to the lighting design problem: the Sylvania *MOHAWK* Fixture Series.

The Mohawk is the most complete fixture line of its type today. It offers you 24 different stylings. This unusual flexibility gives you complete control of the lighting plan. You can mount fixtures individually, in continuous rows, or in your own original pattern. You have a choice of widths, lengths, and number of lamps, as well as four different types of shielding to create the mood you wish.

More than this, the Mohawk is one of the shallowest commercial fixtures available—no more than 3¾" from top to bottom. Yet it maintains a high illumination efficiency; delivers a soft, diffused light. In modern low-ceiling rooms, you can now surface-mount attractive and efficient lighting.

This new fixture series contains many designed-in installation and maintenance features. The Sylvania lighting specialist in your area will be glad to talk over and demonstrate this new trend in lighting for schools, offices and stores.



The Chief, 13⅜" wide. 8-foot unit with Corning #70 Low-Brightness Lens shown.

Dished Contour Plastic. Original new shielding design. *Super-Chief* version shown.

Metal Louvers. Available in 13⅜" width units only.

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After all is said and done...

the one big reason you specify exit devices is *safety*.

And when human lives are at stake, Sargent Exit Devices release doors at the slightest touch of a child's hand. Instantly and easily!

You know that just a ¼" movement of the bar makes the latch free floating. You know that this same easy, roll-fold action works in reverse to *close* doors smoothly, too.

You've also probably heard that stainless steel is used for crossbar bearings, latch bolt pins and springs to give your clients *lasting* protection. Another reason why *you'll* have peace of mind.

Our up-to-the-minute catalogue will show you a wide variety of designs and complete accessories. Send for a copy today.
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SARGENT of New Haven

Sargent Builders' Hardware

Architectural Criticism

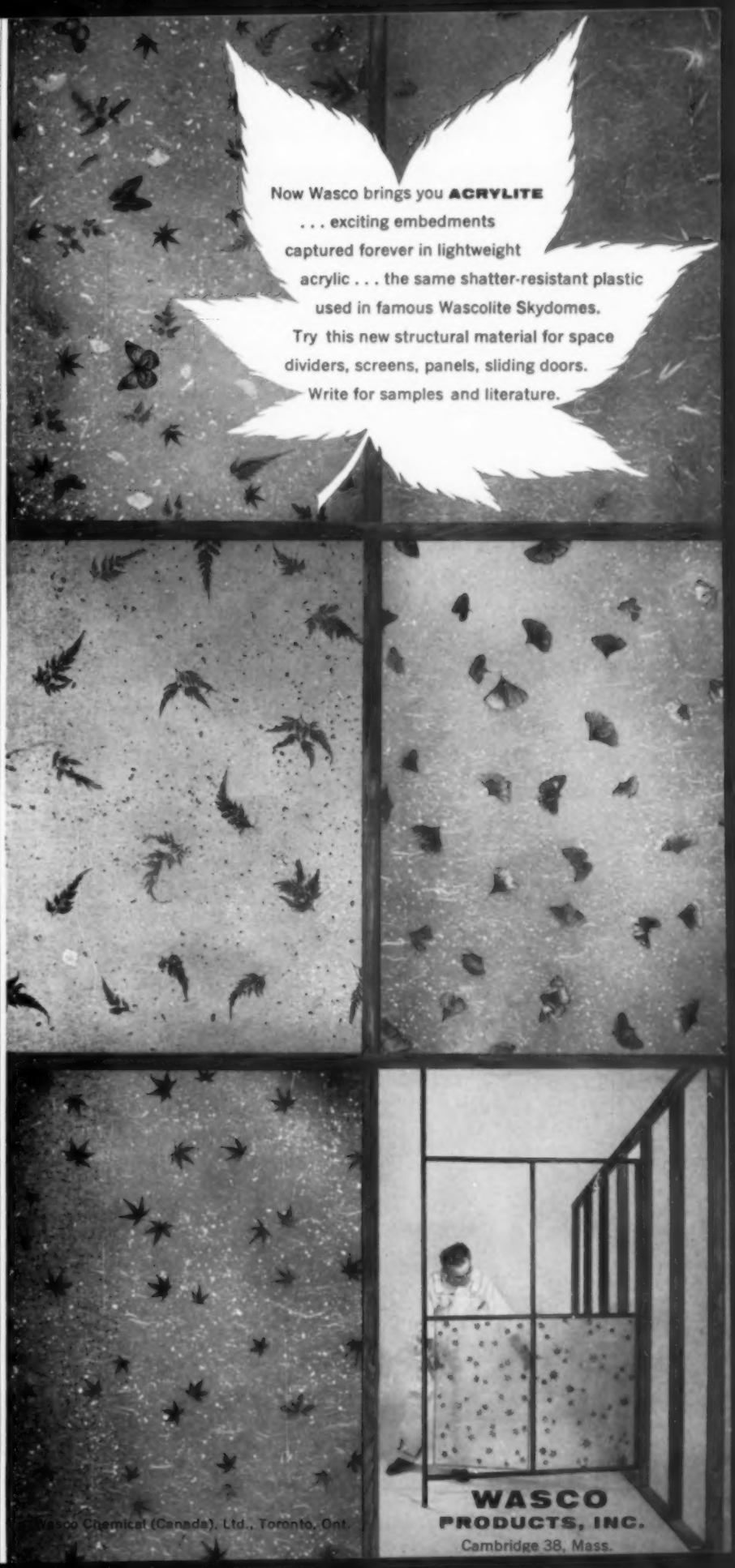
(Continued from page 194)

The esthetic content of modern architecture, while subordinate in its hierarchy of values, was of course not ignored by the critics. But such was the temper of the times that a word like "beauty" was *verboten*. Hence modern buildings which the critics saw as beautiful were described in elliptical terms. Thus Hitchcock and Johnson, in the catalog of the 1932 Museum Show: "The esthetic principles of the International Style are based primarily upon the nature of modern materials and structure and upon modern requirements of planning . . . These *technical* and *utilitarian* factors, in the hands of designers who understand inherent esthetic possibilities, have resulted in an architecture comparable in integrity and *even beauty* to the styles of the past." *(My italics: JMF)*

Generally speaking, esthetic criteria were factual, specific, objective. The Cheneys illustrate this approach very well. The basic principles of modern design are "broad and general. The resulting style marks are few and simple. Honesty, simplicity and functional expressiveness are the primary values involved. . . . Materials are used honestly, each in accordance with its own properties, its adaptation to machine processes. . . . Simplicity in the number and kinds of materials employed. . . . Functional expressiveness . . . insistence upon engineering integrity . . . is accepted as the basic design fact, and the artist's undertaking is to bring out of this fact a characteristic and expressive appearance . . . as beautiful in its own Machine Age way as the dynamo and the ball bearing . . . or the clean bright efficient surgical instrument."

There was, of course, a strong current of anti-esthetic opinion in those early days of the modern movement. Le Corbusier, though anything but an anti-esthete himself,

(Continued on page 202)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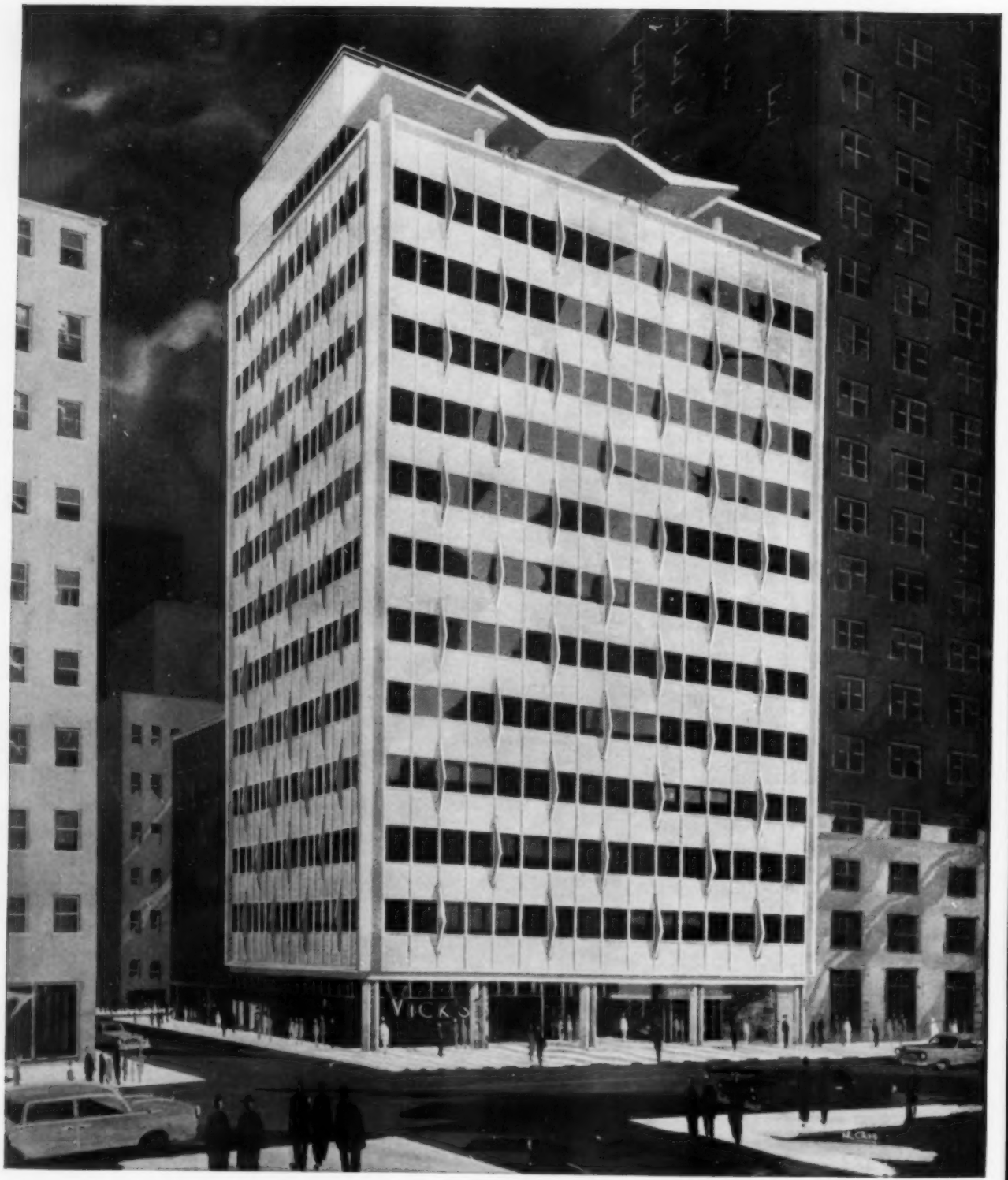
REYNOLDS ALUMINUM IN MODERN ARCHITECTURE



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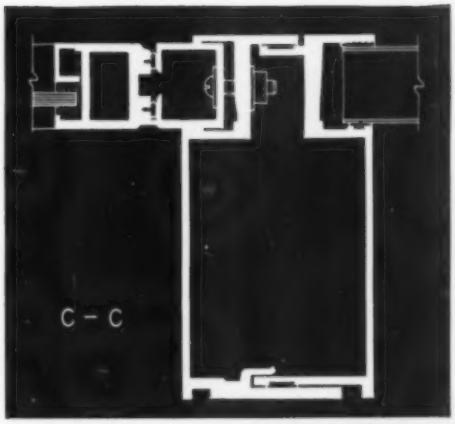

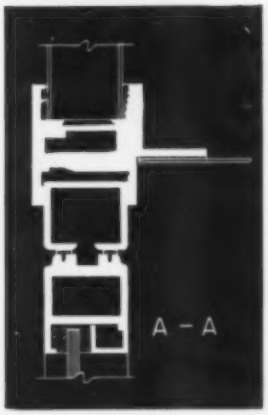

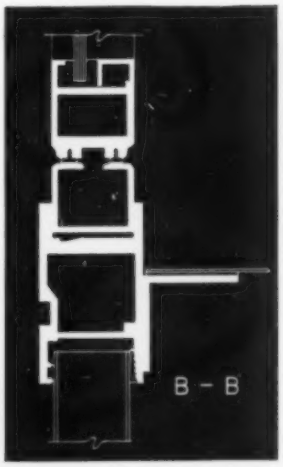

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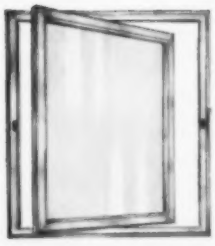

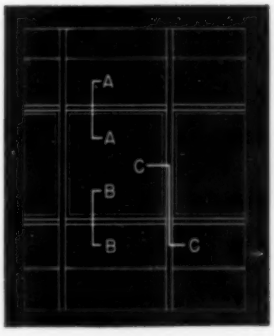

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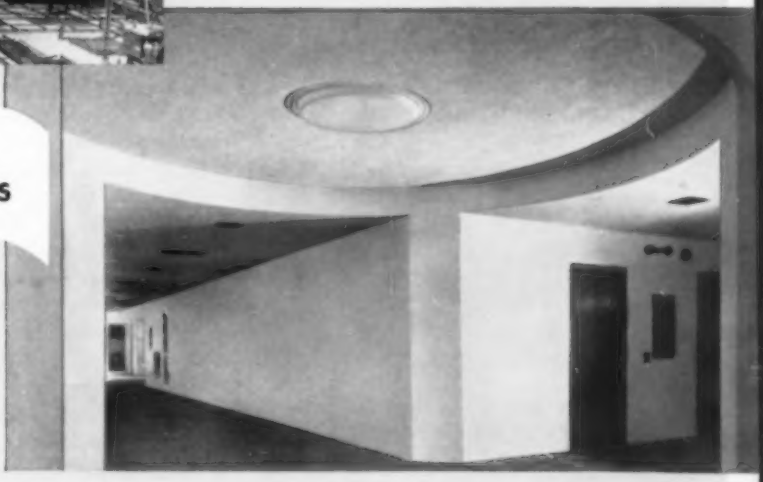

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Housing electrical service within round concrete columns

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Architectural Criticism

(Continued from page 197)

had sent grist to this mill with his dicta that a house was merely a machine for living in. Naturally, this was accepted with glee in America, land of machines, and it led directly to such bald and clumsy efforts as the Chicago Fair of 1933. But the anti-esthetic approach was by no means limited to the anti-intellectuals. There were polished and scholarly Europeans like Sigfried Giedion and the late Hannes Meyer who, according to Hitchcock and Johnson, made "the doctrine of the contemporary anti-esthetic functionalists . . . much more stringent. . . . They claim that interest in proportions or in problems of design for their own sake is still an unfortunate remnant of 19th Century ideology. For these men, it is an absurdity to talk about the modern style in terms of esthetics at all."

There were those, finally, who—while admitting that the esthetic was important—yet insisted on relating it to an over-all social reality. Mumford was one of the most eloquent of these when he wrote: "The esthetic arises out of the actual. The eye is gratified by the new architecture, not alone because its order and composure is the essence of all sound architecture: the eye is likewise happy because every other function of the mind and body is in effective rhythm."

•

All this is ancient history now. The smoke and dust of battle have settled and modern architecture is revealed as the absolutely dominant idiom of America. And there can be little doubt that this victory was substantially due to the critics and editors who, for decades, have been basing their arguments on the hierarchy of values I have described. With the passing of the years, however, and especially in the recent past, a change of emphasis has become increasingly apparent. This again is revealed in the very adjec-

(Continued on page 208)

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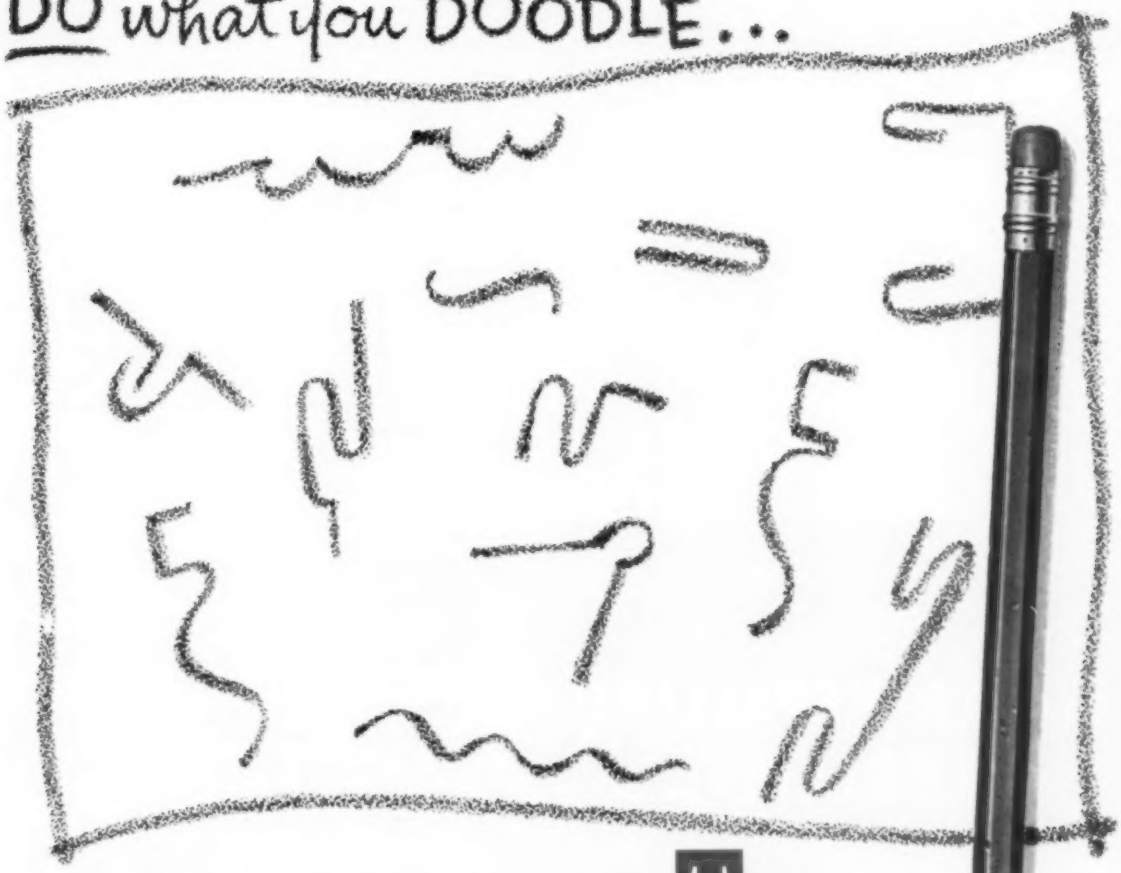

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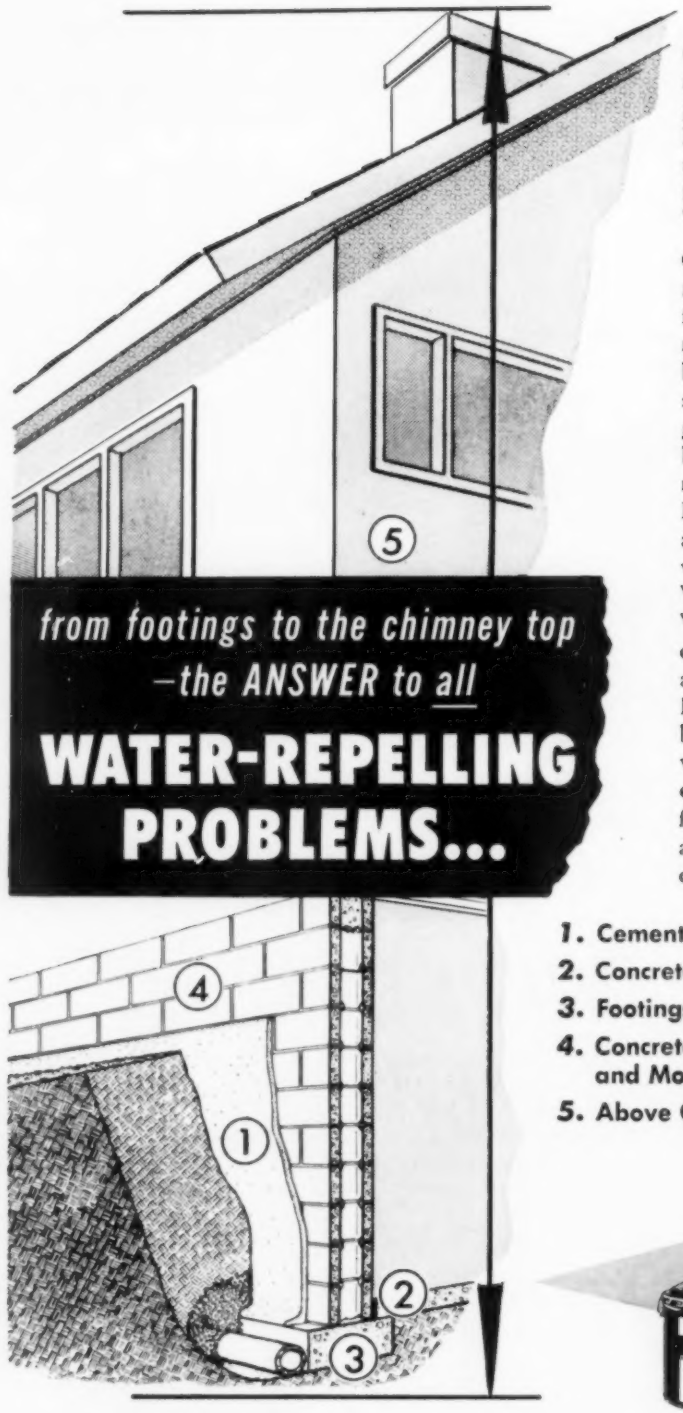

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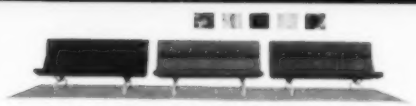

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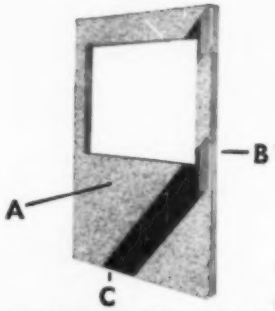

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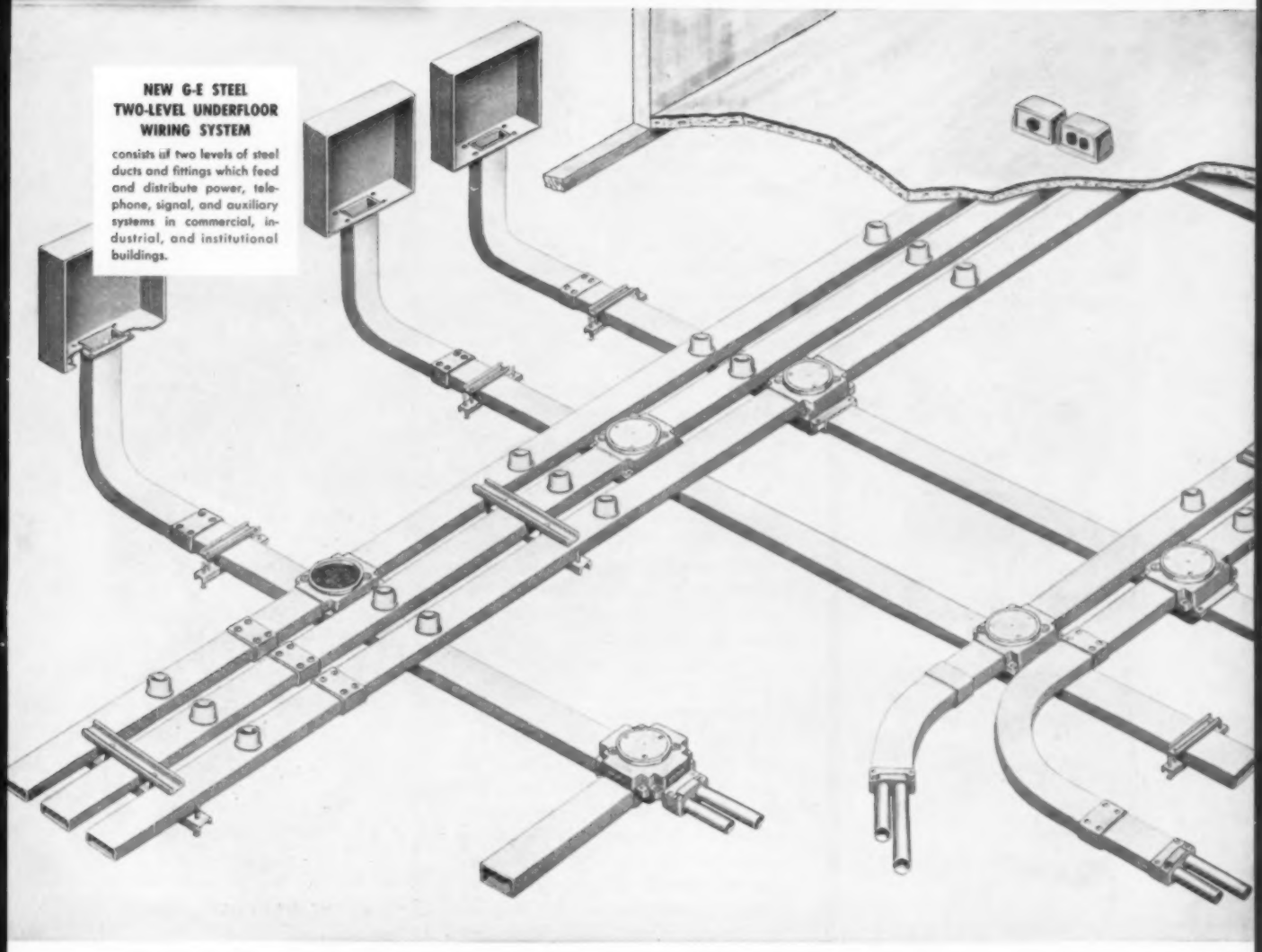
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Architectural Criticism

(Continued from page 202)

tives employed. The phrase "International Style" has been long in disrepute: there is, in fact, a certain hesitancy about using the word "style" at all. The term "functionalism" is under attack by a self-styled *avant-garde:* and Greenough and Sullivan are being disinterred again to see if they really said that "form follows function" and, if so, if they really meant it. Formal problems of esthetics, on the other hand, are increasingly prominent. "Beauty" is once more a perfectly legitimate word. Thanks to the growth of a sense of history among architects and critics alike, the styles of the past are being again discussed with a detachment sadly missing these last three decades. And out of this new interest in the past, in turn, appears another phenomenon: a literature of "taste." Two recent books on "taste" have the distinction of treating the forms of and philosophy of contemporary design on exactly the same plane as Art Nouveau or General Grant—that is, as historical materials.

This shift in emphasis is currently interpreted as a sign of maturity: and so it is. But maturity is, if anything, a period of rather less security than youth. And the question arises; is it wise, either for architects or their critics, to throw overboard so carelessly the philosophic instruments of their victory?

It was inevitable, of course, that as the movement matured its problems if not its perspectives would change. The glass wall was a brilliant tour-de-force in Le Corbusier's Villa Savoye: a quarter century later, it is merely a polished commonplace in Lever House. Mies van der Rohe, in his Barcelona Pavillion of 1929, fired a shot heard round the world: today the open plan is in the common vernacular. Gropius' theory of the pivotal place of industrial production in art and architec-

(Continued on page 210)

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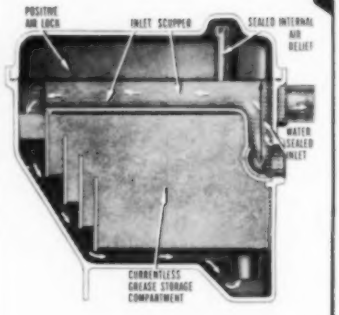

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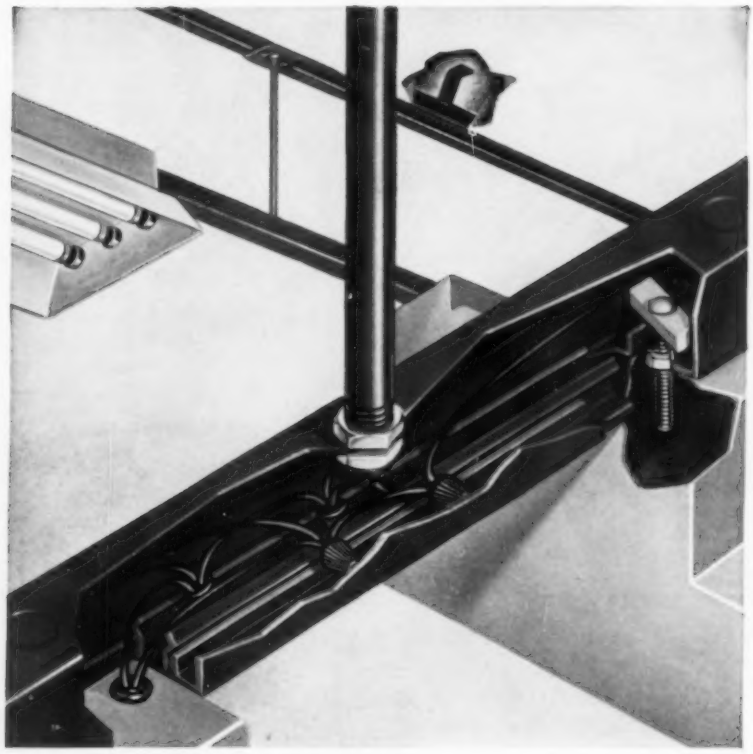

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Architectural Criticism

(Continued from page 208)

tural education: Stein's and Geddes' standards for housing and town planning design—these are integral parts of current practice. One might assume from all of this that modern architecture has accomplished all its given tasks; that nothing remains except the esthetic refinement of accomplished forms.

As a matter of fact, this seems to be what one important group of the modern movement is telling us. Aline Saarinen, one of our best known art critics and herself the wife of a distinguished architect, says this group feels "that structure is the dominant element in architecture, and that if it is used in the most direct, reasonable and economical way, it will automatically produce beauty. In even simpler terms, it has been called the dogma of "less is more." This is, as she puts it, a highly moral dogma. It has produced buildings whose sheer visual impact is often impressive. But compared to the much broader and more complex set of values of 25 years ago there are significant omissions: no reference to efficient plan, to all sorts of functional problems of adaptation to site and climate, of biological and sociological well-being. The esthetic factor, in other words, has been removed from its matrix of social reality. And this tendency toward isolating form from content, of replacing multi-dimensional performance with a single-dimensional appearance, has disturbing consequences for architecture. Buildings which are open to attack on functional grounds will be defended on the grounds of their beauty. People who venture to point out that the glass unprotected wall is hot in summer and cold in winter, no matter how beautifully it photographs, will be dismissed as vulgarians, ignorant of the "spiritual" dimensions of the building involved. Projected far enough, this line of development will lead to the sort of irrational sub-

(Continued on page 212)

RIGID STEEL BENTS FORM BASIC FRAME OF WHEATLEY SCHOOL, EAST WILLISTON, LONG ISLAND

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Architectural Criticism

(Continued from page 210)

jectivism which, as far as I can see, has all but destroyed the criticism of modern art.

It would be nonsense to pretend that the modern style is perfect. It has produced its full quota of mistakes: these range from the ugly and brutal to the merely cold and inept. At its best, it has been a sober, rational, noncommittal idiom. Seldom has it risen to the spontaneous, the exuberant, or the gay. And this admitted fact exposes it to erosion from another sector of critical opinion, which accuses it of lacking "warmth," "richness," "color," and "humanity." These charges are not without foundation and contemporary architects are aware of it. But they are also aware that these are, in sober truth, just about the same charges one could make about our world as a whole. The connection is umbilical: and the critic who ignores this, who insists on grafting an extraneous esthetic onto living structure, runs the risk of repeating the folly of Pugin and Ruskin.

This, as I see it, is the hazard of the "architecture of taste." It substitutes a highly personal set of literary and artistic values for purely architectural ones, susceptible to rational analysis and objective control. The critic who writes about architecture must constantly remember that, though he necessarily uses a literary form developed for novels and painting, his subject is *not* literature, *not* art. Architecture operates according to a set of laws peculiarly its own, incomparably more complex than those which govern the other fine arts. Analogies between them are possible—they share common problems of composition and color—but are strictly limited in their utility. I do not mean to imply that each man, at the level of civil liberties, is not entitled to his own taste. But the term, as currently employed, implies rather more than this: implies—if I read Rus-

(Continued on page 218)

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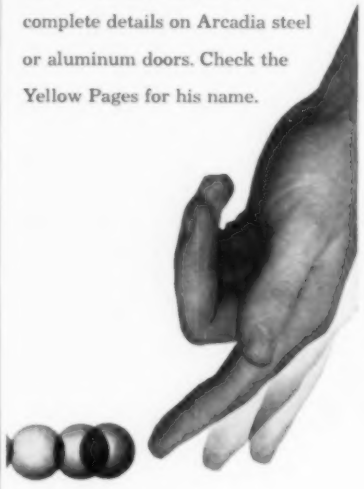

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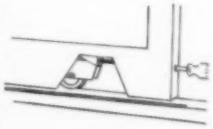

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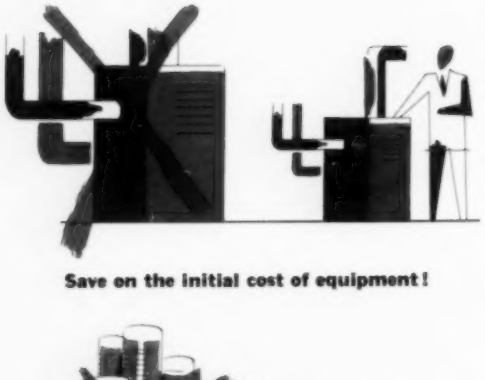

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. . . up to $400 or more on the initial cost of equipment!

. . . 30% or more over FHA minimums on annual operating expenses!

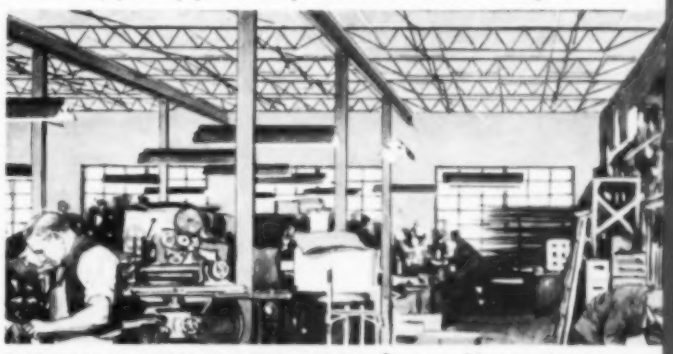
Equal savings can be reflected in store, office, factory and public building construction where adequate amounts of insulation have been specified by the architect.

In addition to insulation, Fiberglas has developed other specialized products to meet the needs of air conditioning commercial and industrial structures. These materials—pictured on the following page—do *double* duty . . . helping assure cooler comfort in summer and warmer comfort in winter—with maximum economy all year round! These Fiberglas materials help make the promise of *low-cost* "*comfort-conditioning*" a reality!

OMFORTABLE WORKING CONDITIONS and low cost, winter *and* summer, 're practical when Fiberglas Insulation is specified in curtain wall construction ɔr air-conditioned administrative buildings and offices. Whether insulated ırtain walls are assembled in the field or prefabricated, they go up fast, reduce aintenance costs, slash fuel bills, "comfort-condition" office employees.

FIBERGLAS-INSULATED CURTAIN WALLS are also ideal for modern factory buildings and industrial plants where easy erection, low-cost thermal protection and maximum efficiency are especially important. Some types are up to *70% less expensive* than ordinary walls of equal "U" factor. The air-conditioned comfort they permit pays off in improved morale and increased production.

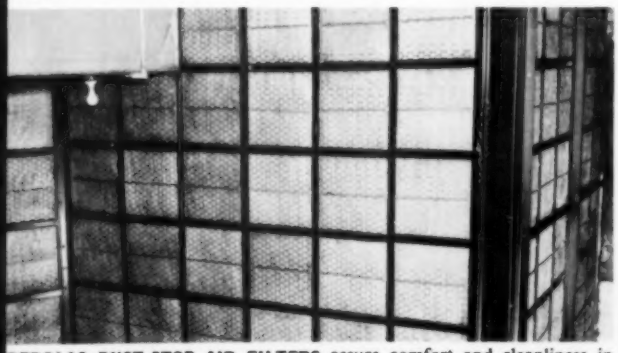
IBERGLAS ROOF INSULATION—for flat or low-pitched roofs—delivers gh-quality insulation at low cost. For instance, ¾" of Fiberglas Roof Inılation does the same insulating job as a *full inch* of most other materials. ightweight, easy to cut and apply . . . saves time and labor costs. Assures eater fuel savings in winter, lower air-conditioning costs.



FIBERGLAS ACOUSTICAL FORM BOARD—for use with poured gypsum roof decks—offers extra advantages and economies, performs 3 big jobs at one low cost: (1) permanent, dimensionally-stable form board; (2) fire-safe acoustical ceiling with pleasing underside appearance (cuts noise up to 75%!); and (3) highly efficient insulation which cuts air-conditioning costs.

BERGLAS DUCT INSULATION can (1) prevent excessive heat gain in airnditioning ducts, make cooling easier; (2) silence the sound of air moveent; (3) prevent condensation on cool ducts. Fiberglas duct insulations—in shapes and sizes; rigid or flexible, faced, sprayed, or uncoated—are easy apply, dimensionally stable, offer high efficiency.

FIBERGLAS DUAL-TEMP PIPE INSULATION keeps cool pipes dry . . . is ideal for pipes carrying cold fluids through humid areas. Because it has its own integral vapor barrier, it seals out moisture that could condense on the pipe and freeze. And it serves as a highly efficient thermal barrier. Keeps liquids at proper temperature. White or black jackets to meet appearance requirements.



BERGLAS DUST-STOP AIR FILTERS assure comfort and cleanliness in r-conditioning systems. Dust-Stops trap contaminating factors like dust, rt and pollen *all through the filter*—not just on the surface . . . thus resist logging." Fiberglas Dust-Stops save money, allow units to operate more iciently. They're inexpensive, disposable!

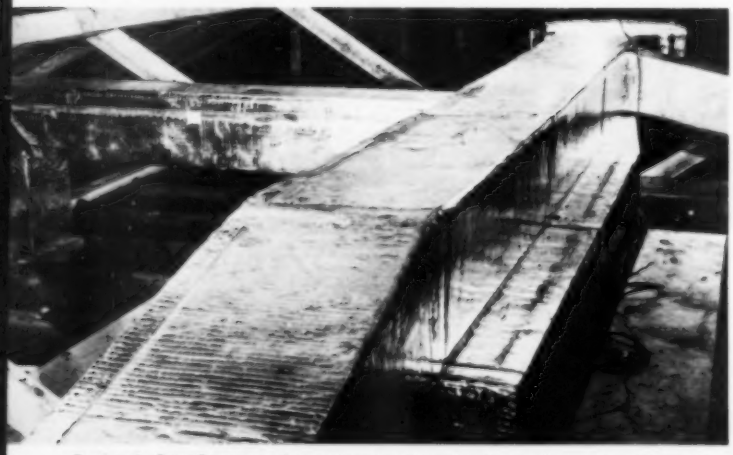
FIBERGLAS OFFICE DRAPERIES meet the demand for the look—and feel—of coolness more than any other fabric. Available in the widest range of patterns and colors, they're easy to keep clean. They actually *filter* sunshine . . . let *in* cheerful brightness . . . add a bright psychological lift to everyone's office day. Absolutely fire-safe, too!

AND REMEMBER THESE FIBERGLAS MATERIALS

...when designing air-conditioned HOMES!

Fiberglas Foil-Enclosed Insulation in a modern home can keep out as much sweltering summer heat as a ¾-ton air conditioner can remove—and at a fraction of the cost! Even in non-air-conditioned homes, this means extra comfort. And with adequate insulation, air conditioning can always be *added* to a home at lowest cost.

Fiberglas Perimeter Insulation solves the winter problem of heat los through the slab edges of modern homes. Uninsulated slabs are often cold an uncomfortable, may cause moisture to condense and stain floors, start rotting, o loosen floor-covering adhesives. With Fiberglas Perimeter Insulation around slal edges or crawl space areas, comfort stays high, fuel bills stay down, floors stay dry

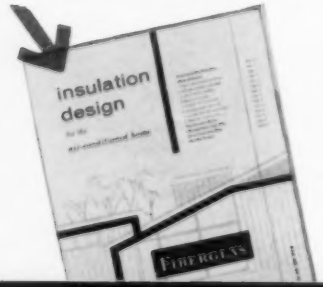


Latest development in Fiberglas Duct Insulation for residential use is a revolutionary new inexpensive *prefabricated* duct—made of Fiberglas Insulation faced with special foil. It comes absolutely flat . . . yet is easily and precisely folded into place on the spot . . . with no expensive or time-consuming metal work! This new duct material is dimensionally stable—won't shrink, swell, or buckle!

Fiberglas* Dust-Stop* Air Filters for residential air-conditionin systems and warm-air furnaces are key factors in assuring home comfort an cleanliness. Dust-Stops are extra-efficient because they trap dust, dirt and polle *all through the filter*—not just on the surface . . . thus resist "clogging." They' inexpensive, disposable, easy to change.

FREE BOOKLET:

"Insulation design for the air-conditioned home"



This outstandingly helpful booklet covers the design problems of air-conditioned homes. Specially written for architectural use, with charts, diagrams and other valuable information. *House & Home* says building professionals should get a copy of this booklet ". . . the quicker the better if you have an air-conditioned house on your drawing board."

For your free copy—and for information on any Fiberglas product—send your name and address to Owens-Corning Fiberglas Corporation, Dept. 63-F, Toledo 1, Ohio.

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GARDEN REDWOOD, because of its beauty and great durability, has been used by them in an imposing list of residential gardens—and equally well in the field of industrial, recreational, and educational landscaping.

Osmundson and Staley are also known for their design of the 1955 California Spring Garden Show . . . from which a detail is shown below.

Stimulating design ideas for garden structures may be found in the new CRA *Garden Ideas* booklet. Write now for your free copy.

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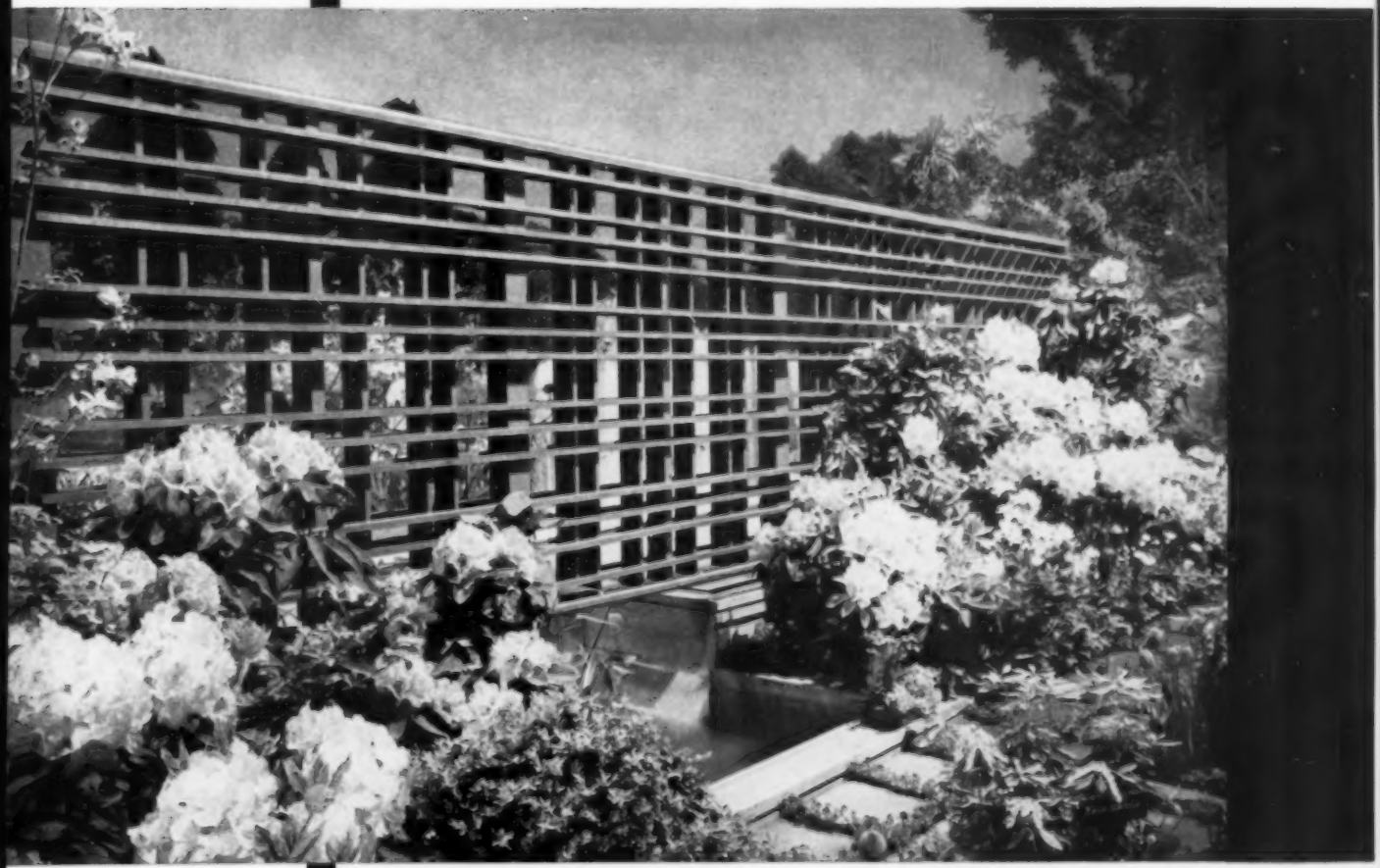

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Architectural Criticism

(Continued from page 212)

sel Lynes and Wayne Andrews correctly—a consciously *eclectic* taste. It is not necessary for me to remind this audience that such a doctrine, in the past, has proved a risky weapon in the hands of the connoisseur; an extremely destructive one in the hands of the influential critic; and, in the hands of the architect, absolutely disastrous.

•

There *is* a crisis in criticism and this is merely a reflection of the crisis in architecture itself. A new stage of development is clearly at hand: new directions must be charted, new policies adopted. But it is my own feeling that this is not exclusively, not even primarily, an esthetic problem. Nor will it be solved by discussions as to whose esthetic system is correct—Wright's or Mies van der Rohe's, or Le Corbusier's. Today's need is for agreement on principles, not forms. These principles must encompass all the ramifications of architecture: social and cultural, technical and scientific, emotional and esthetic, in balance.

The body of principles on which our current style was founded are rusty from neglect—where is the great polemical theorizing of the '20s and '30s?—but they are far from obsolete. In my opinion, we suffer not from too much attention to function, but too little: honest structure and efficient plan is not too common, but too scarce. Interest in such sociological problems as town and regional planning is nonexistent. We are fascinated with gadgetry but ignorant of science. Even in the field of esthetics, we have dropped behind the bold inventive level of the '20s.

All of these lines of development initially charted by the movement are as valid now as then: in many, the need is more urgent now than it ever was. We can smile at the brave new world of European housing which Catherine Bauer used to

(Continued on page 222)

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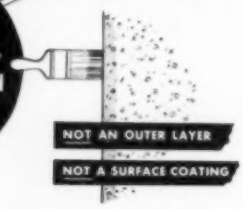
the STRUCTURAL INTEGRATION method



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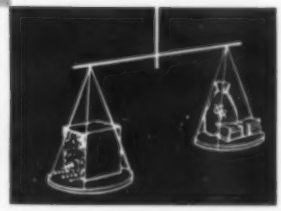

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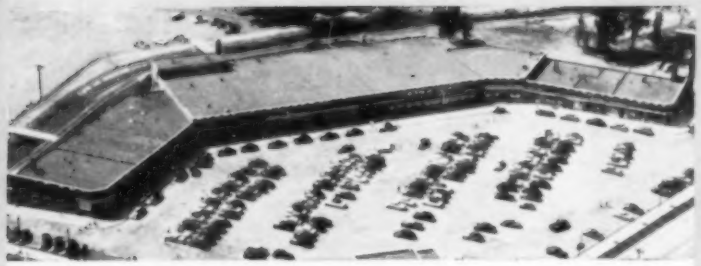

CHERRYWOOD SHOPPING CENTER, WANTAGH, L. I., with 25 stores. One of many in the Long Island area designed and built by Berger & Tilles, who have standardized on Janitrol Unit Heaters. Heating Eng. M. Prop; Heating Contractor, Metropolitan Sheet Metal Co., Elmhurst, L.I.

This blower-type Janitrol unit feeding a duct system is typical of the modern heating provided stores at Cherrywood Shopping Center.

Warm air registers (circled in photo) provide efficient heat distribution in the 25 stores at Cherrywood Shopping Center.

CLEVELAND'S FAMOUS VAN AKEN CENTER, built and owned by Zehman-Wolf Construction Company. Weinberg and Teare, Architects. Says Mr. Milton A. Wolf, Partner—"With over 80% of our 27 stores year 'round conditioned, savings in air conditioning equipment were important. To cut costs, but not performance, we specified Janitrol Duct Furnaces in combination with summer cooling units. We are completely satisfied with our Janitrols. We've had no maintenance problems."

Suspended Duct Heater combined with a summer conditioner at Van Aken Center. Bypass duct cuts off air through furnace during cooling season.

WHAT'S BEHIND JANITROL MULTIPLE FOR SHOPPING

Only a Janitrol Multiple Unit System Provides all these Basic Advantages

SAVE UP TO 50% ON INITIAL COST... Compact, factory-assembled Janitrol heaters install easily—save up to 50% on original equipment and installation cost when used in place of a central system.

UNUSUAL ECONOMY OF OPERATION... Actual cost records from major shopping centers show extraordinary savings in fuel and freedom from maintenance expense.

SAVE INCOME-PRODUCING SPACE... Janitrol units are ceiling mounted, save valuable floor space for sales or service needs.

EXTRA-LONG SERVICE LIFE... Janitrol heaters feature the famous Multi-Thermex Heat Exchanger with the finest performance record in

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Write today for complete A.I.A. files on heating with gas in big buildings of every type, and for Janitrol planning and specifications service. There's no obligation.

MAKERS OF *Surface* INDUSTRIAL FURNACES, *Kathabar* HUMIDITY CONDITIONING, *Janitrol* COMMERCIAL, INDUSTRIAL AND RESIDENTIAL HEATING AND COOLING EQUIPMENT.

THE TREND TO HEATING UNITS CENTERS?

the industry—less than ¼ of 1% heat exchanger tube failures in over a million tubes since 1940!

SUMMER COOLING EASILY ADDED... Cooling coils are easily added in the same ductwork used for heating. A bypass arrangement cuts off air flow through heater during cooling season.

INDIVIDUAL STORE CONTROL... Tenants control heating to suit individual needs. The building owner is relieved of responsibility for operating costs, maintenance, service.

VERSATILE "DUAL FUEL" PERFORMANCE... Janitrol heaters use any type gas, including LP; may be switched from one type to another automatically.

Janitrol field representatives are trained in heating layouts and proper installation methods to assure all the benefits and economies of gas—the clean modern fuel, in an efficient multiple-unit system. They will gladly consult with you on your heating problems.

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Surface Combustion Corporation
Columbus 16, Ohio

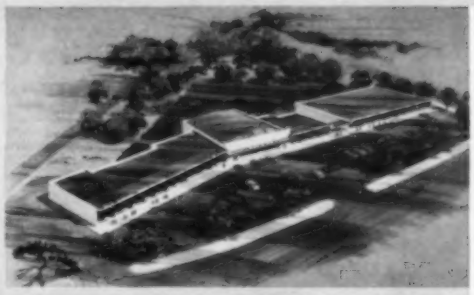
In Canada: Moffat Heating and Air Conditioning Division, Moffats, Ltd., Toronto 15.

68 JANITROL UNIT HEATERS AT EASTGATE SHOPPING CENTER, AKRON, provide clean, economical gas heating with minimum maintenance expense, use absolutely no floor space! The versatility of Janitrol gas-fired heaters makes them easily adaptable for a wide variety of installations. Choice of input capacities from 50,000 to 1,750,000 Btu/hr.

At Eastgate's 13 stores, Janitrol unit heaters
- ... direct heat where most needed
- ... operate only when needed
- ... save valuable floor space

AT LEVITTOWN'S GATEWAY SHOPPING CENTER, all tenants control their own heating to suit operating hours and individual needs, and the building owner is relieved of responsibility and expense for operation. This convenience for tenants and freedom from furnace financing for the owner is made possible by compact, efficient Janitrol gas-fired unit heaters in place of a central system.

Typical installations of Janitrol gas-fired unit heaters in stores at Levittown's Gateway Shopping Center. Heating-Plumbing Contractors, Latisch and Launer, Brooklyn, N.Y.



NEW DOUGLASTON SHOPPING CENTER, QUEENS, N.Y.

(Architect's sketch.) One of 17 Centers developed by Architect Herbert Tannenbaum, New York City, who says—"I feel it is my responsibility to specify more than just a heating system. I demand proved performance, so I have standardized on Janitrol gas-fired heating. I know, from over a decade of experience, of Janitrol's good record for low maintenance and service costs.

Janitrol Duct Heater installation in Safeway Store at Douglaston Shopping Center.

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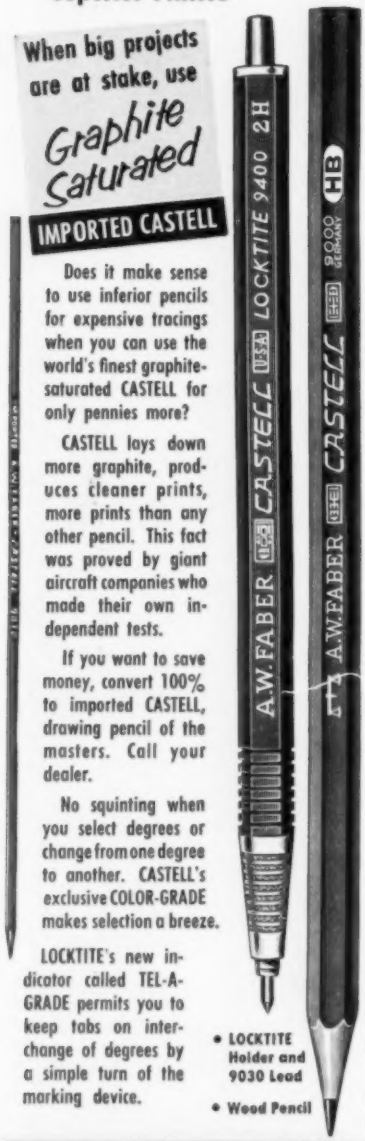
LOCKTITE's new indicator called TEL-A-GRADE permits you to keep tabs on interchange of degrees by a simple turn of the marking device.



• LOCKTITE Holder and 9030 Lead
• Wood Pencil

A.W. FABER-CASTELL
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Architectural Criticism

(Continued from page 218)

paint for us, at the naive airports in Le Corbusier's skyscraper studded parks, at the failure of such Utopian projects as Wright's *Broadacres* or Stein's *Radburn*. But are we today, with greater knowledge and greater resources, making plans "with the magic to stir men's blood"? They dreamed of rebuilding towns, regions, the whole earth. We are content with a superblock. We have not exhausted the potential resources of modern architecture: we have barely scratched the surface. So before we talk of discarding this great body of principles as merely a collection of "fallacies" let us remember that, taken together, they furnished the platform on which the West could build the first authentically great and original system of architectural expression since the days of Saint Denis and Chartres.

notices

conference

EARTHQUAKE ENGINEERING RESEARCH INSTITUTE and UNIVERSITY OF CALIFORNIA, in co-operation with STRUCTURAL DIVISION OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS and the STRUCTURAL ENGINEERS ASSOCIATION OF CALIFORNIA, will hold World Conference on Earthquake Engineering at University of California, Berkeley, Calif., June 12-16.

summer school

MASSACHUSETTS INSTITUTE OF TECHNOLOGY's Special Summer Programs, 1956, include following: *Plastics in Building*, July 2-13; *Structural Design for Dynamic Loads*, August 6-17; *The Artist, Materials, and Technology*, August 13-31; and *City and Regional Planning*, August 20-31. For further information write Prof. Ernest H. Huntress, MIT.

(Continued on page 224)

WHY DIDN'T THEY GET WINDOWS WITH CALDWELL BALANCES?!

The doctor probably can't answer that one . . . but he does know that windows which are always falling or sticking are an exasperating nuisance. And the maintenance crew knows how much extra time it takes to keep them in any semblance of working order . . . all reflected in high overall operational costs which plague the administrator every month, year after year. There is no practical substitute for the quality window with Caldwell Sash Balances.

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All Caldwell Sash Balances are guaranteed to provide positive lifting power for the lifetime of the building. *Backed by Caldwell's 68-year reputation for making quality products and standing behind them.*

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For Residential Windows. The spiral balance that can be adjusted easily and quickly, *after* installation, for perfect balance. Operates smoothly and quietly.

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For Commercial and Institutional Windows. The spiral balance specifically designed for heavy sash. Drastically cuts installation time with separate attaching arm and simple locking piece.

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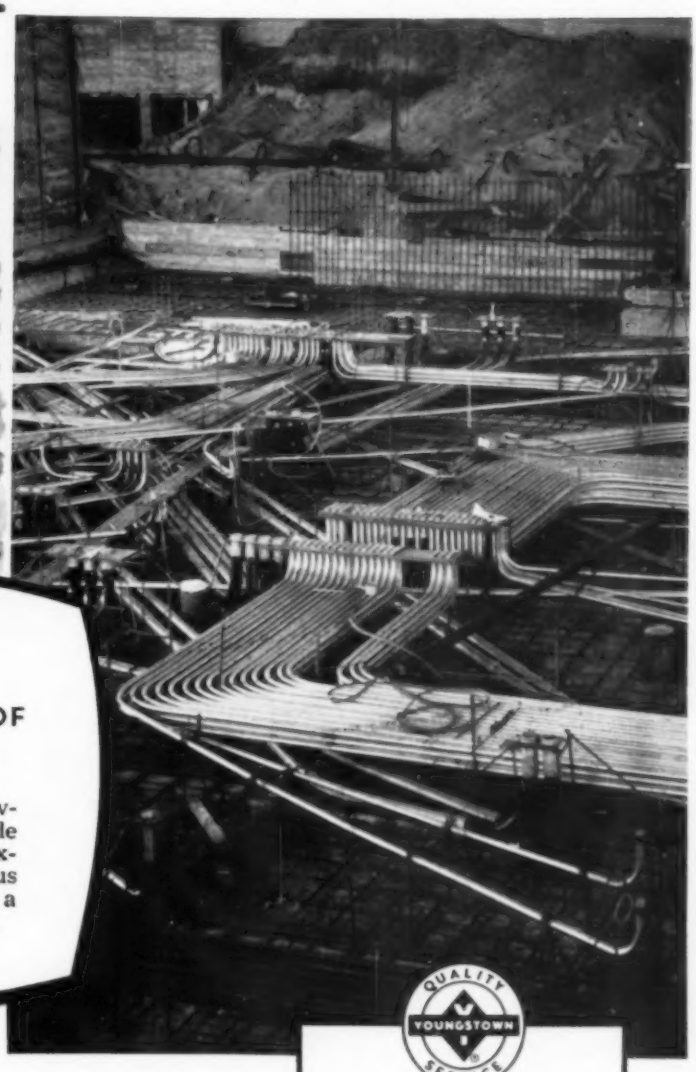

Wherever electrical wiring must function safely and efficiently in hazardous locations, install Youngstown Buckeye rigid steel conduit. It is easy to bend . . . easy to fish wires through . . . and economical, because its greater corrosion resistance means a longer, trouble-free service life. When you install Buckeye you're one of thousands of contractors, owners and architects who make it one of the world's best known brands of standard-threaded, full-weight rigid steel conduit.

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notices

(Continued from page 222)

consultant

DAVID C. SLIPHER has been retained by FRIGIDAIRE Division, GENERAL MOTORS CORP., as consultant on research, design, and marketing of appliance and air-conditioning products.

expositions

The 22nd NATIONAL EXPOSITION OF POWER AND MECHANICAL ENGINEERING, under auspices of THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS, will be held November 26-30, 1956, in New York Coliseum, New York.

The 13th INTERNATIONAL HEATING AND AIR-CONDITIONING EXPOSITION, under auspices of AMERICAN SOCIETY OF HEATING AND AIR-CONDITIONING ENGINEERS, will be held February 25-March 1, 1957, in International Amphitheatre, Chicago, Ill.

new name

JOHN STERLING CORPORATION is new name of STERLING HARDWARE MANUFACTURING COMPANY, 2345 W. Nelson St., Chicago 18, Ill. No change in ownership or management. John Sterling continued as President; familiar trademark of "Sterling Hardware" will be used for company's products.

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HOFFMAN SALES DIVISION, 426 W. College St., Los Angeles, Calif. is now Southern California distributor for CHAMBERS RANGES, INC., Indianapolis, Ind.

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RICHARD L. SCHERBACHER, new Advertising and Promotion Manager, POMONA TILE MANUFACTURING CO., 629 N. La Brea, Los Angeles 36, Calif.

(Continued on page 228)

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Metalab is proud to be the company selected by General Motors to equip its new Technical Center with the latest scientific laboratory furniture and equipment.

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See the General Motors article in this issue showing you some of the features of this leading industrial research technical center.

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Curtain walls of Porcelain-enameled and Stainless Steel

RCA's Cherry Hill Offices and Laboratories near Camden, N. J. are an important outpost in the field of industrial building design. 1400 people work here; and some 320,000 square feet of floor area are encased by the richly colored steel wall panels, which in turn are supported by a bright grid of durable Stainless Steel mullions.

The porcelain fused to the surface of steel enameling sheets is highly resistant to abrasion. The panels reflect radiant heat and lower the air-conditioning load. Total wall thickness is only $2\frac{11}{16}$", so thousands of square feet of floor area are added beyond the area provided in masonry construction. The panels *wash themselves* every time it rains, and the Stainless Steel framing and porcelain panels will last as long as the projected life of the building.

The curtain wall weighs only 6½ psf, so there is a notable saving in structural framing. The panels also serve another purpose: they are resistant to radioactive contamination.

No other curtain wall system can offer such rich color and durability at anywhere *near* the low price of Porcelain-enameled and Stainless Steel. For more information, write to United States Steel, Room 5347, William Penn Place, Pittsburgh 30, Pennsylvania.

Architect: Vincent G. Kling, Philadelphia, Pa.
General Contractor: Turner Construction Company, New York, N. Y.
Panel Contractor: General Bronze Co., Garden City, Long Island, N. Y.
Panel Manufacturer: Ingram-Richardson Mfg. Co., Beaver Falls, Pa.

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*U.S. Patent 2,456,903; 2,614,785; other pats. pend.

notices

(Continued from page 224)

new associates

ROBERT G. MALLORY and GEORGE C. PEARL were recently appointed Associate Architects by FERGUSON, STEVENS & ASSOCIATES, Architects-Engineers, 115 Amherst Dr. S.E., Alburquerque, N. Mex.

SHERWOOD F. RITZ, JR., has become a member of the firm of COLEMAN & COLEMAN, Architects, Landisville, Pa.

GEORGE FRED PELHAM, JR., Architect, has joined KELLY & GRUZEN, Architects-Engineers, 80 Fifth Ave., New York 11, N.Y.

DANIEL MANN, JOHNSON & MENDENHALL, Architects-Engineers, 4201 Sunset Blvd., Los Angeles 29, Calif., recently named the following as Associates: SHUJI MAGOTA, T. K. KUTAY, JACK C. HANDLEY, WALTER W. BEESON, ALFRED W. DAY, MARVIN J. KUDROFF, ROBERT J. SULLY, A. H. MATUSEK, EDWARD L. FRUMHOFF.

new offices, partnerships

GUY B. PANERO ENGINEERS, 420 Lexington Ave., New York 17, N.Y., announce opening of two European offices: Chase Manhattan Bank Building, 39 Rue Cambon, Paris, France, and 6 Via Salandra, Rome, Italy.

DAVID G. MURRAY & ASSOCIATES, Architects, with offices at 4232 S. Peoria Ave., Tulsa 5, Okla.

BEACHAM, RACE, BEACHAM & WOOD, Architects-Engineers, 3 W. Lewis Plaza, Greenville, S.C.

HOWARD T. FISHER & ASSOCIATES PRUYN AND BRYANT INC., 322 W. Washington St., Chicago, Ill.

LAWRENCE, DYKES & ASSOCIATES, ARCHITECTS, 125 Valleyview N.W., Canton, Ohio.

SHERWOOD, MILLS & SMITH, Architects, Stamford, Conn., announce that GRAY TAYLOR has been made a junior partner in the firm.

JOHN H. CUNNINGHAM, Architect, Thompson Bridge Rd. at Christopher Dr., Gainesville, Ga.

LILLIS & SMITH, Architects, 912 Tennessee St., Vallejo, Calif.

CERF ROSS ASSOCIATED, Architects, 111 Auditorium Circle, San Antonio 5, Tex.

PERKINS & WILL, Architects-Engineers, Chicago and White Plains, N.Y., have named six new partners. In Chicago: BROCK ARMS, JOHN BOYCE, and WILMONT VICKREY. In White Plains: HARRY GILLIES, ALBERT HOOVER, and JAMES LOTHROP.

DANA D. CORROUGH, Architect, 205 Lincoln Center, 6725 Pacific Ave., Stockton, Calif.

JOHN BRENNER & ASSOCIATES, ARCHITECTS, 702 Title & Trust Building, Phoenix, Ariz. E. W. (REX) MCINTIRE, Ill., is new partner.

WELTON BECKET & ASSOCIATES, Architects-Engineers, 5657 Wilshire Blvd., Los Angeles, Calif., announce opening of new office at 2225 Bryan St., Dallas, Tex.

WILLIAM B. TABLER, Architect, 401 Seventh Ave., New York, N.Y.

J. LARRY POOLE, Architect, 214 Commerce St., Kingsport, Tenn.

new addresses

ERNEST J. KUMP, Architects-Planning Consultants, 450 Ramona St., Palo Alto, Calif.

JOHN B. PARKIN ASSOCIATES, Architects-Engineers, 1500 Don Mills Rd., Toronto 6, Ontario.

FLEWELLING & MOODY, Architects, 766 Colorado Blvd., Los Angeles 41, Calif.

W. ASA HUDSON & GENE H. BROCKOW, Architects, 6318 San Vicente Blvd., Los Angeles, Calif.

JAMES A. STRIPPLING, Architect, Florida Education Association Building, W. Pensacola St., Tallahassee. Fla.

H. E. BOVAY, JR., Consulting Engineers, 5009 Caroline St., Houston Tex.

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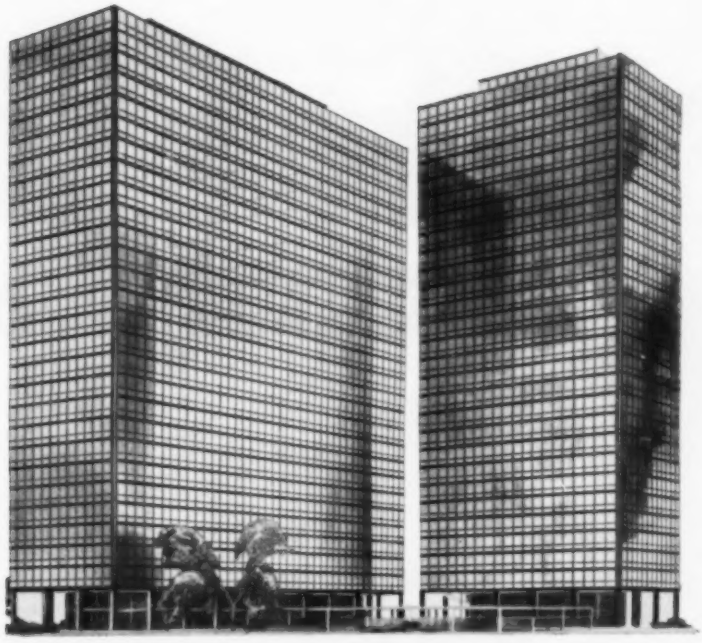

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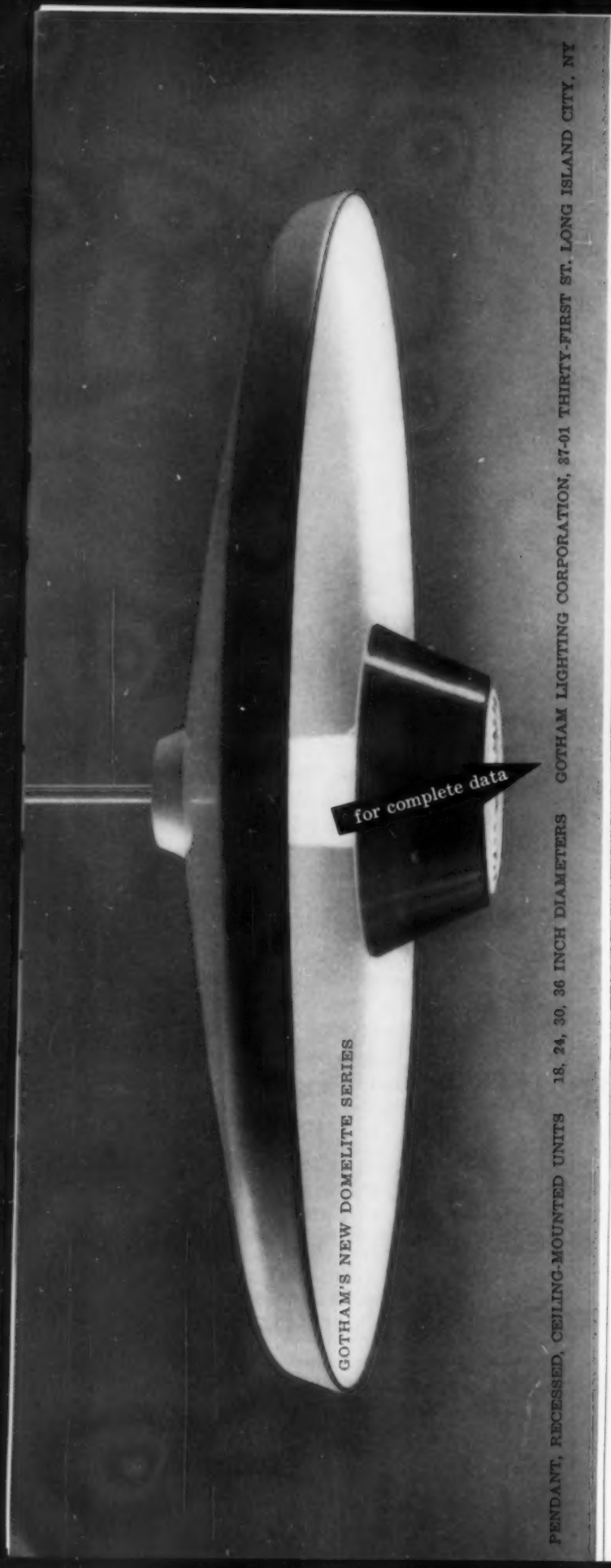

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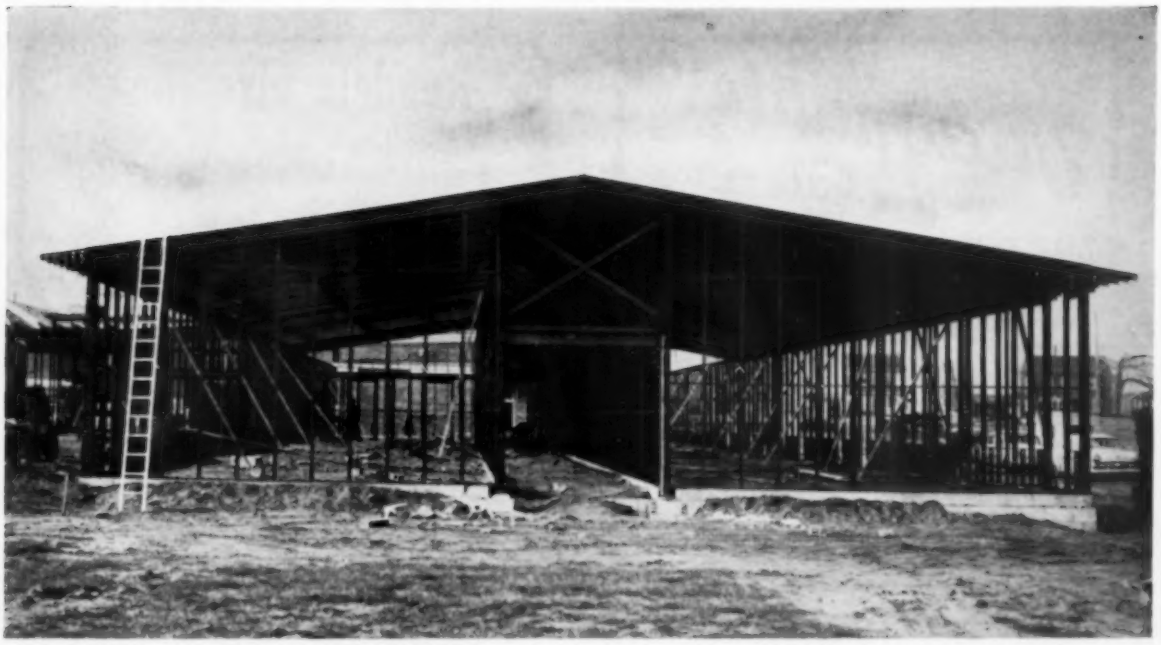

how LIGHTSTEEL cut cost of school addition to $14,500 per classroom

When Architect Alfonso Alvarez was confronted with the need for 16 classrooms, but had only $251,000 available, cost was his major consideration in the design of the new addition to New Jersey's Freehold Township School.

Comparative cost analyses were made of a number of types of construction. From the results of these studies it was decided to build the addition with Penmetal LIGHTSTEEL structural sections. The economy of this framing system is shown by the following figures, based on a contract cost of $232,004: Cost per pupil – 360 pupils – $644; Cost per classroom – with 4 unfinished rooms – $14,500; Cost per sq. ft. $13.65.

Economical to buy, LIGHTSTEEL sections also cut actual erection costs. Because they are light in weight, steel members for load-bearing partitions and roof joists could be shop-assembled . . . then trucked to the job site for immediate placement.

Other savings were obtained by means of the nailing grooves in double studs and joists. By utilizing this feature, exterior sheathing, metal lath and acoustical tile could be nailed directly to the steel sections.

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Write for details of economical Penmetal LIGHTSTEEL framing.

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FREEHOLD TOWNSHIP SCHOOL
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County Superintendent: Earl B. Garrison
Architect: Alfonso Alvarez, Architect and Associates, Upper Montclair, N. J.
General Contractor:
Highland Park Construction Company

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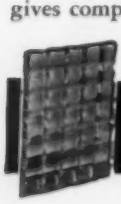

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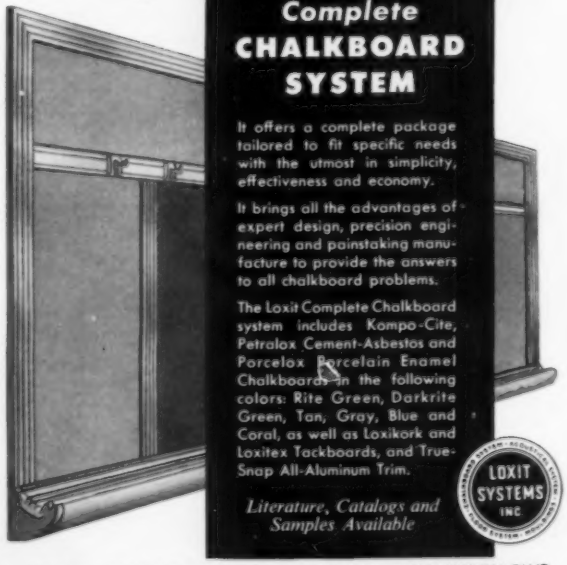

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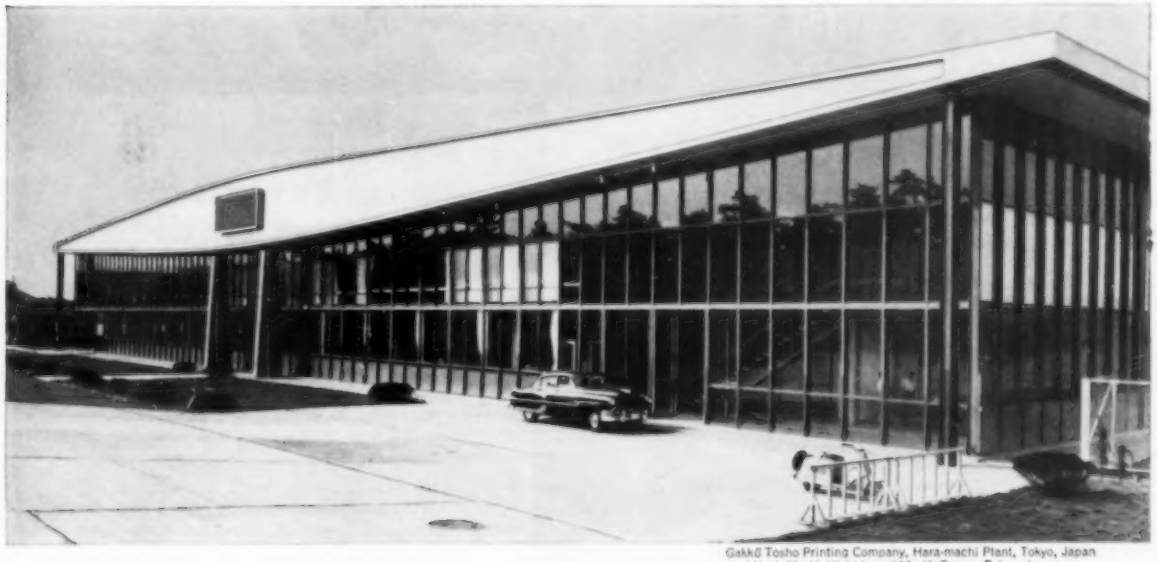

Gakkō Tosho Printing Company, Hara-machi Plant, Tokyo, Japan
Architect: Mr. H. Kishida and Mr. K. Tange, Tokyo, Japan
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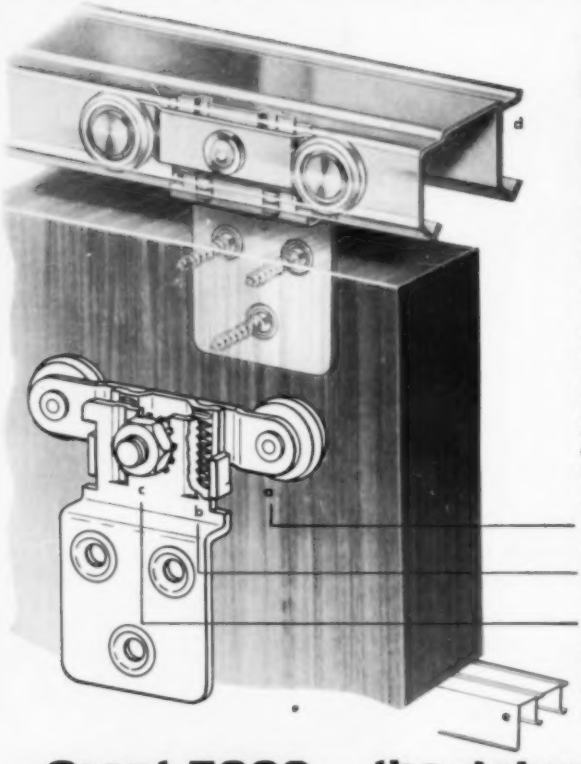

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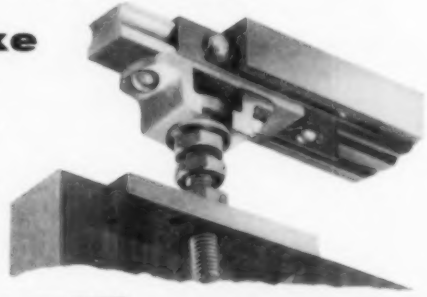

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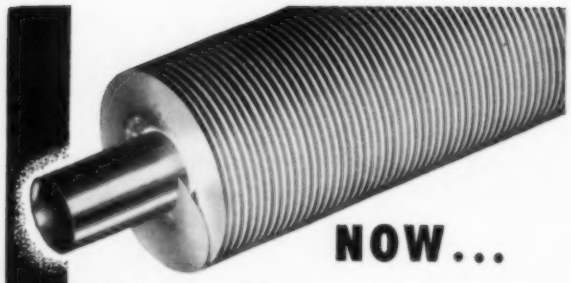

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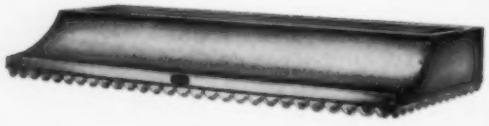

By

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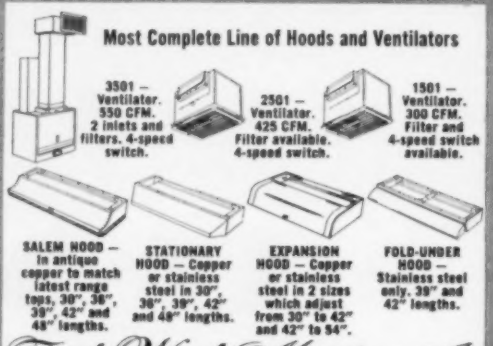
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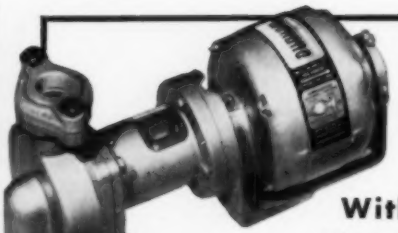

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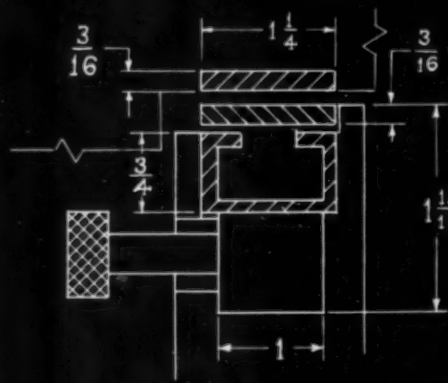
166-167



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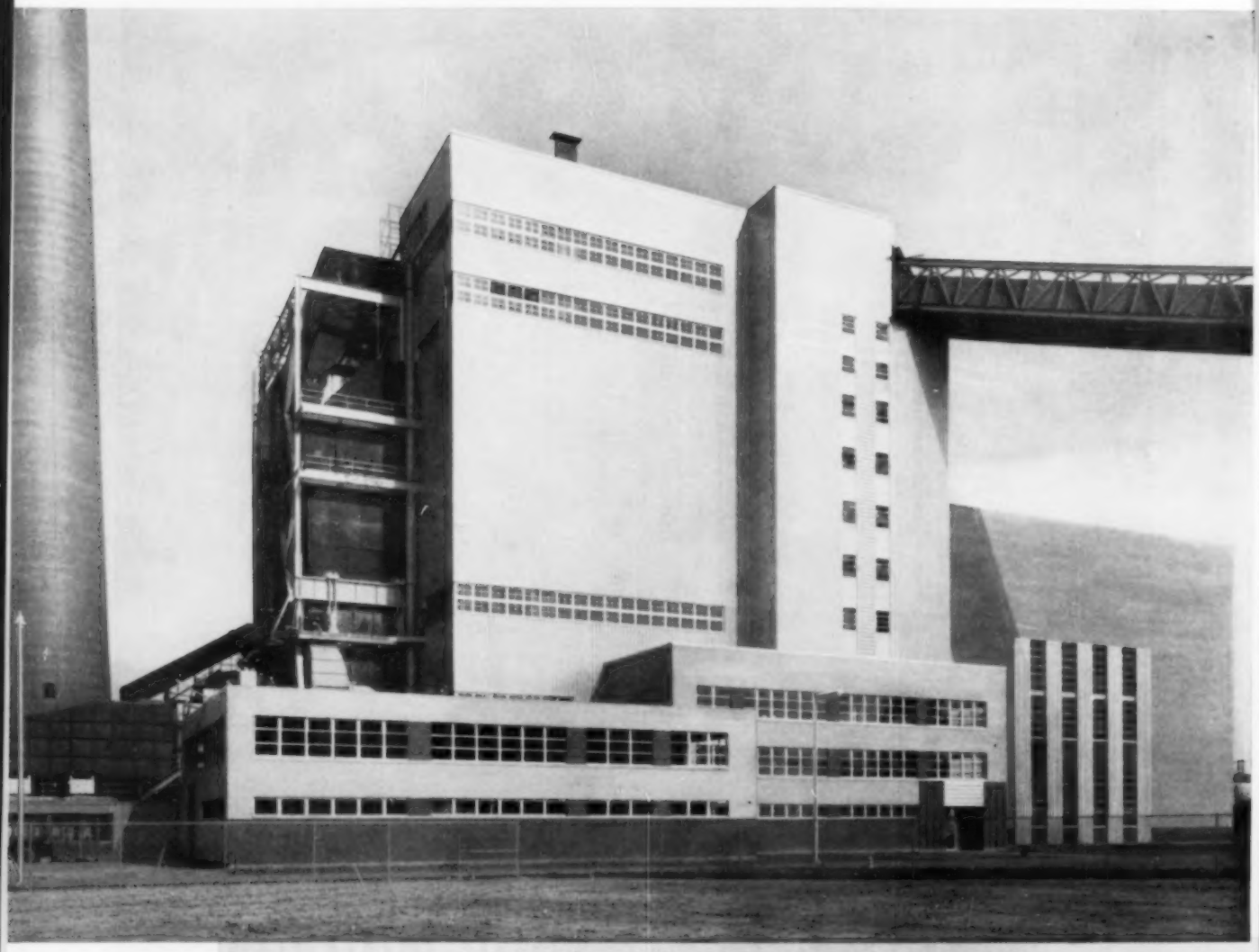
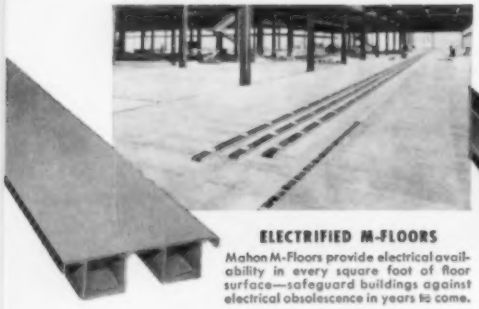


Above is the Bay Shore Station of The Toledo Edison Company. In this new, modern steam generating plant, Mahon Insulated Metal Walls with Aluminum exterior plates were employed for the high structure. The low structure is brick with an aluminum insert over the main entrance, and five aluminum pilasters dividing the glass areas in the brick section at the right. All of these inserts are constructed with Mahon Aluminum Wall Plates. Engineering Design and Construction by the Engineering Department, The Toledo Edison Company. George A. Soathoff, Consulting Engineer. A. Bentley & Sons Co., Gen. Contrs.



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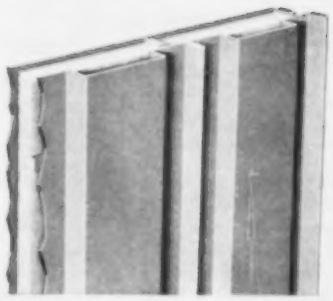
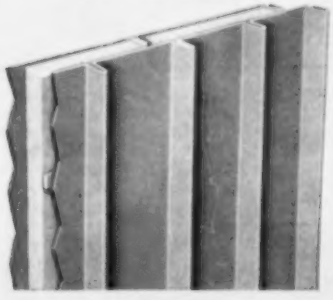
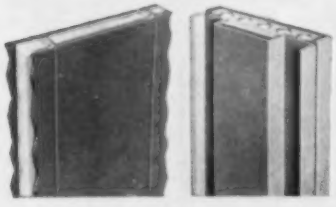


MAHON FLUTED WALL
FIELD CONSTRUCTED



MAHON RIBBED WALL
FIELD CONSTRUCTED



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(Continued on page 246)

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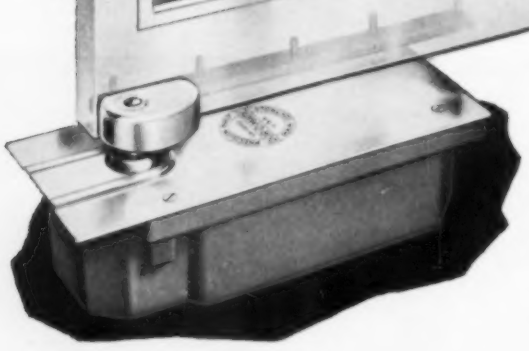

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(Continued from page 242)

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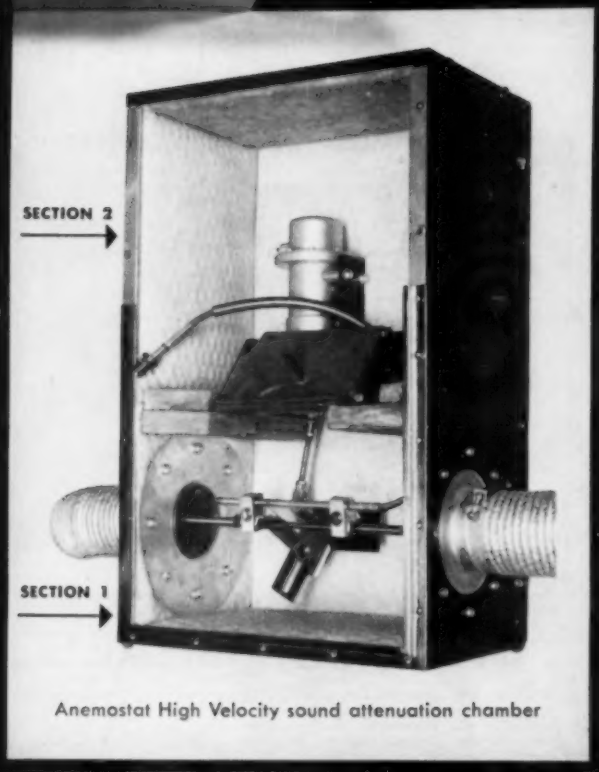
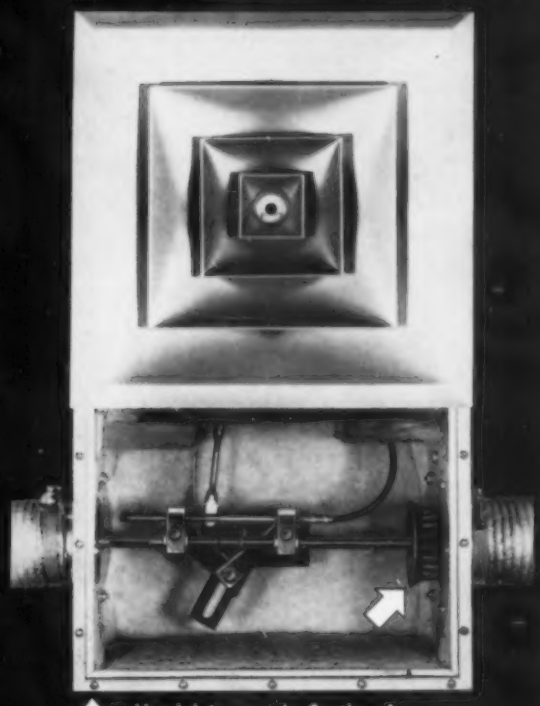
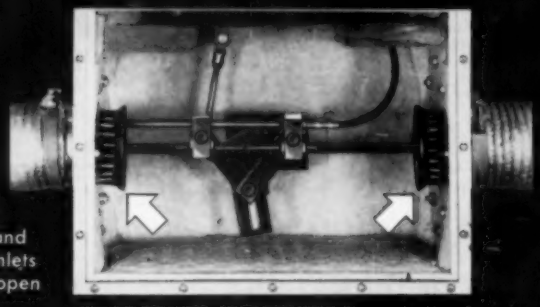


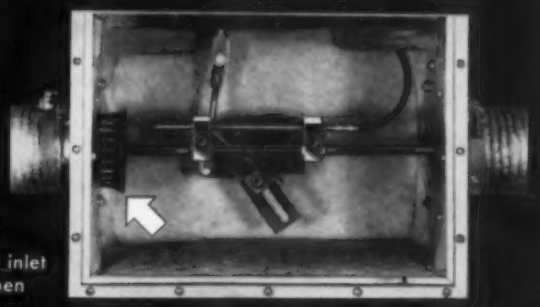
Anemostat High Velocity sound attenuation chamber



Hot inlet open in Section 1.
Anemostat in place covers Section 2



Hot and cold inlets 50% open



Cold inlet open

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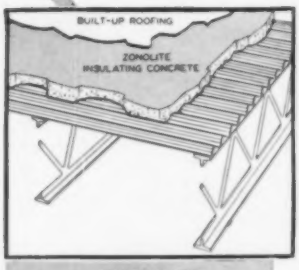

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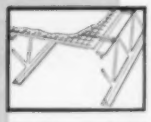
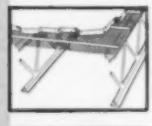


Zonolite Concrete over Ribbed Metal Lath



Zonolite Concrete over Paper Backed Wire Lath

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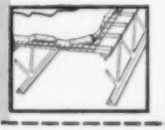

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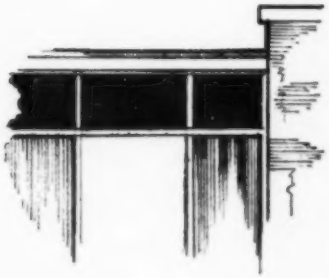

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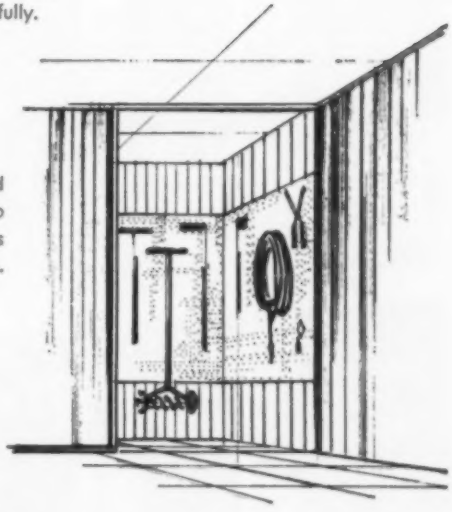

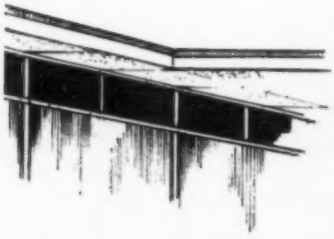

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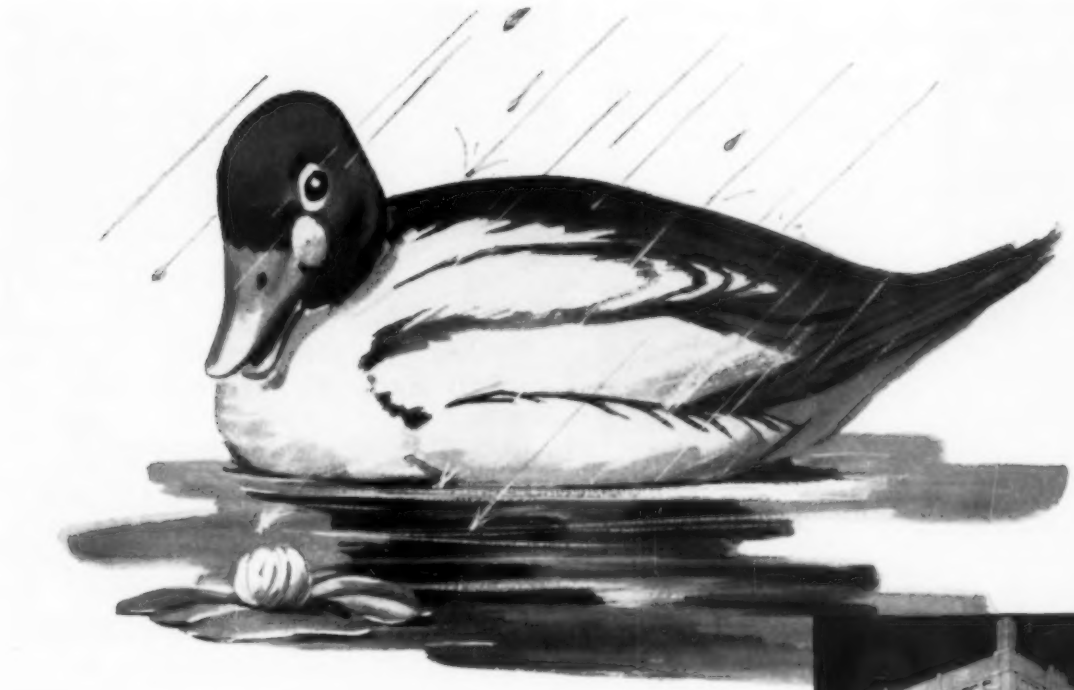

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P.S.

There are obviously many satisfactions in residential design for the architect. When P/A turns its editorial focus on the subject sharply, as we do in this issue, we are always impressed with the number of first-rate examples there are to choose from, and with the degree of both technical and esthetic advances. Not only are client relationships usually closer in this field than they are in, let's say, commercial work, but also the opportunities for experiment—what we called, a few years ago, the "design laboratory" aspect of house architecture —are very great. These must be the reasons for the statistics turned up in our last business survey—that 63% of the reporting firms had private residential work on their boards, although this category makes up only 4% of the total dollar volume of architect-designed building.

It is probably fortunate that this is the most likely first commission for the beginning architect: his own house (which can be as advanced as the mortgage institution will allow) or Aunt Peggy's house, or the house for a friend of Uncle Dan's, is probably the first chance he'll have to collect a fee on the ideas he's been nurturing ever since he framed the B.Arch. parchment. But it's not only the beginner who's intrigued by the design of living space. I just had lunch with a partner in one of the biggest firms in the East, and what he wanted to talk about most was the delightful little house (it'll only run around $50,000) that he's doing out on the Main Line.

The influence of the contemporary house on all aspects of today's architecture is an intriguing subject. Consider the fact that the original reputatations of most of our great current names in architecture were based on houses—Le Corbusier, Gropius, through a long period, Neutra, Wright, Raymond —and, in a younger generation, Stone, Soriano, Stubbins, Johnson, and so on. Younger still, it's true of people like Drake, Rudolph, and others. Eero Saarinen is probably an outstanding exception. Most of these talents are now directed primarily to larger work, but none of them ever turns down the promising house commission.

Consider also the obvious technical and planning innovations, now commonly accepted, that showed up first in the house: larger glass areas, more open planning, less fixed partitioning, natural use of materials, and so on. And remember also that rational modern study of programming and analysis of sociological changes came more quickly here than in the commercial and institutional areas where use-patterns seemed more fixed and rigid. I'd have to do some research to prove it, but I'm quite sure that studies of how the 20th Century family lives preceded scientific analyses of how that family shopped, or how its children learned, or even how its members reacted to health care.

Esthetically, the impact of house design on architecture generally would not be so easy to establish, but I think it could be shown. Certainly the work of the early masters that I have referred to broke the ice in the frozen waters of traditionalism—in the two directions of the early, European "pierced cube" house, and of Wright's low-sweeping houses at the turn of the century. I think we have seen the effect more recently, on many types of buildings, of the suavity of Ed Stone's work; the simple richness of Gordon Drake's (I shall never forget the simultaneous enthusiasm of Eliel Saarinen and Fred Severud when we "discovered" Drake's first to-be-published house in a Jury meeting for a P/A Awards judgment in 1946), or the mastery of space and materials in Paul Rudolph's first Sarasota houses.

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These esthetic moves have not been easy to translate in terms of schools, office buildings, and hospitals. Exposed beams, rich, warm materials, shading overhangs, the transition-zone which we document in this issue, low dividers of space, contrast between smaller areas and a larger opening-up: these are not standards, criteria, and developments that adapt themselves readily to the design of a 30-story skyscraper. The more rigid principles of indicated structure and polished detail do, of course; Mies can demonstrate his thesis equally well in a house or an apartment tower.

I think, however, that as architects become inevitably more involved in larger planning projects, the application of principles already studied for the individual house will be more apparent. Lou Kahn's Mill Creek project in Philadelphia, which influenced Ed Bacon and the Planning Commission there to the Greenway principle (open, planted space linking new developments, older neighborhoods, and individual worthwhile buildings) is a direct urban-design translation of the building/site relationship in space planning that residential architects have been preaching for years. The sense of human scale that so many planners are now crying for—whether it is produced by relationship of high and low buildings, relationship of building to environment, or more directly by detail of building-design elements—is something the modern residential architects from Wright and Maybeck through, let's say, Henry Hill or Van Evera Bailey, have been trying to express for quite some years.

I think it is true that the strongest residential designers have been the most successful in carrying over into other work some of the regional flavor, some of the texture-as-ornament feeling, and some of the refinement in detail that they demonstrated first in the house. Belluschi in churches, for example; Stone in his hotels; Stubbins in his schools; Neutra in his commercial work, Wurster, in, for instance, a library. In other instances, the relationsip and influence is not so direct; but I'm sure that it's there, even if it comes from early training rather than recent practice in house architecture. It seems to me that the man who started right out in a purely commercial architect's office, and has been doing just stores and offices and multistory housing ever since, lacks a necessary training in architecture as human shelter. I remember one successful, extremely polished big-business architect who finally did a house. It looked just like a small commercial hotel! Perhaps some of his commercial hotels would have looked more like places to live in, if he had spent some time first designing houses.

Thomas H. Creighton

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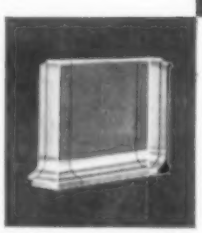
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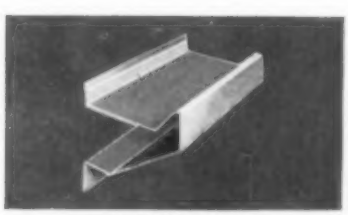
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